

The Early Civilizations

Obsidian in the Larger Context of Predynastic/Archaic Egyptian Red Sea Trade

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This paper represents the third and concluding part of a study dealing with the distribution and trade of obsidian in the Red Sea. It was initially stimulated by survey work carried out in Saudi Arabia during 1979-1985. Subsequent investigations into the larger problem brought me into contact with a variety of colleagues and the entire study crystallized during the summer of 1987. In conjunction with the resources placed at my disposal in Rome by the staff of the Istituto Italiano per il Medio ed Estremo Oriente, the larger pattern of obsidian trade was investigated. In particular, I would like to thank Dr Vincenzo Francaviglia without whose analyses and information the work could not have been completed. The first part of the study was presented in 1987 at Venice during the Ninth International Conference of the Association of South Asian Archaeologists in Western Europe and dealt with the southern Red Sea resources and early trade in obsidian (Zarins 1990). The second part outlining the participation of prehistoric Egypt in this trade was published by the University of Chicago (Zarins 1989). This study will concentrate on some other highly desirable items the ancient Egyptians obtained in the Red Sea by long distance trade in conjunction with obsidian.

Introduction

Obsidian, as a natural glass of volcanic origin, lends itself by virtue of its petrochemical properties, as an object of study to identify various archaeological trade route patterns between source and utilized artifact. It became an ideal object of research due to its homogeneous nature and the apparent ease with which different sources could be identified based on both classical petrochemical and trace element analyses. Additionally, since early obsidians were prized for their flaking ability and their extremely sharp edges, and archaeologists could recover their remains very systematically, the study of obsidian distribution became rather popular. Initial work by optical spectroscopy helped determine Neolithic and Bronze Age distribution patterns in the Aegean, Mediterranean, and Anatolia (Cann and Renfrew 1964; Renfrew *et al.* 1965; Hallam *et al.* 1976; Cann

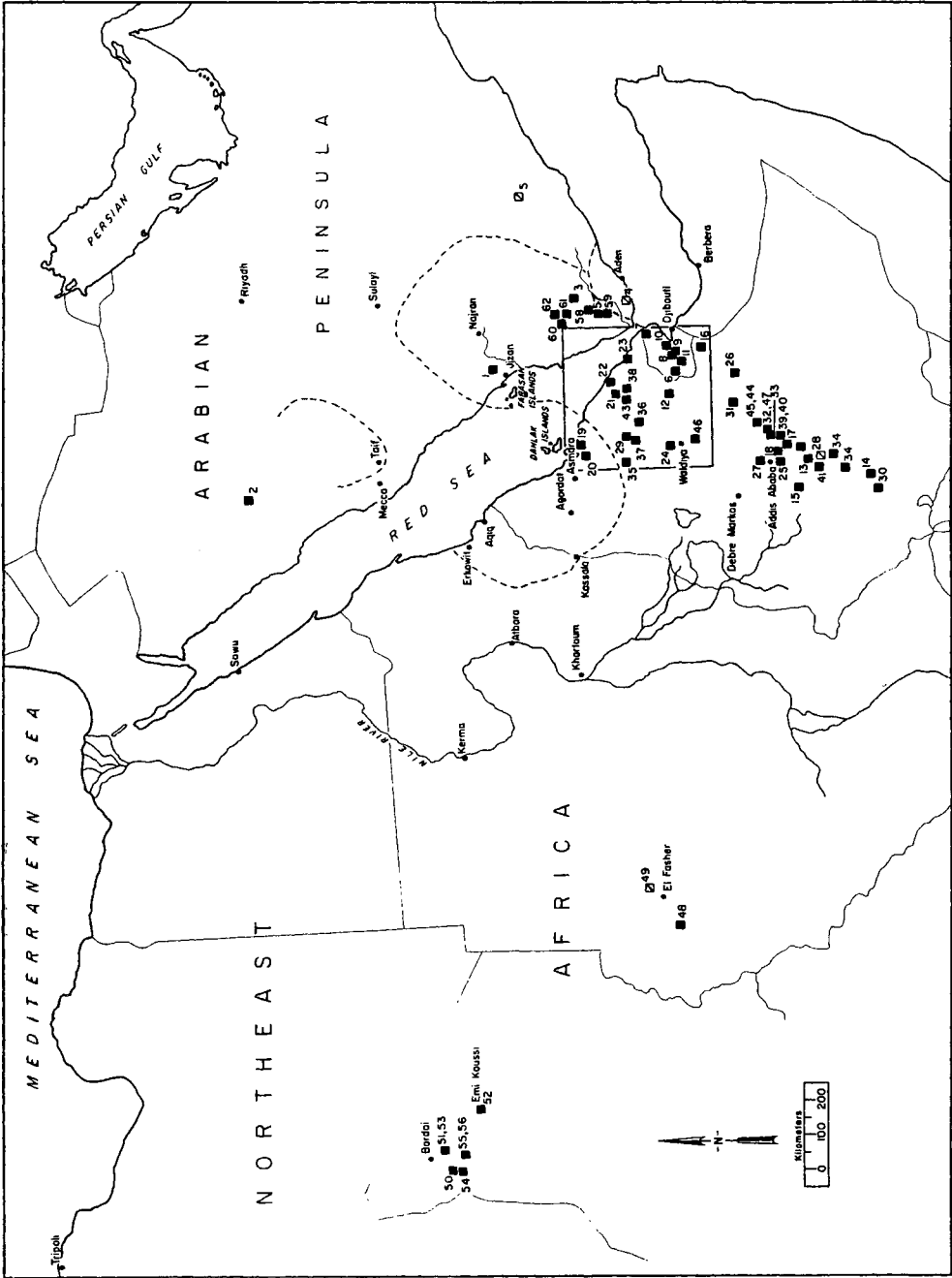


Figure 1 Reported obsidian sources in the southern Red Sea

et al. 1971; Dixon 1976). Subsequent techniques have refined the process of identification and more precise trade patterns have been identified (Renfrew 1975; 1977; Torrence 1986: 94-6). Simultaneously, more sophisticated models and interpretation techniques have been set up to deal with obsidian trade and distribution.

Red Sea source areas and archaeological data

Specifically, within the general region of the southern Red Sea, obsidian work, tied to the more general problem of archaeological exploration, lagged considerably behind that found in the Anatolian and Mediterranean areas. Initially, the Renfrew School identified five obsidian sources in Ethiopia/Djibouti and one each in Kenya, the Tibesti massif of Tchad, and Southwest Arabia (Cann and Renfrew 1964: fig. 1). Subsequent work suggested a twofold source for Egyptian obsidians from the southern Red Sea, clustered into Groups 4D and 1J (Renfrew and Dixon 1976: 140f, 144 and table 1). My more recent investigation into source areas of the southern Red Sea (Zarins 1990: 515-8) yielded a total of forty-two sources in Ethiopia/Djibouti and ten in Arabia (Figure 1). Undoubtedly, more await to be discovered and analyzed. Source characterization carried out by the author revealed the presence of at least five major subgroups (Zarins 1990: 521-6). The detailed focus on Arabian archaeological obsidian samples suggested that four or five subgroups could be observed and that an initial interaction pattern began in the sixth millennium BC. This trade involved the Red Sea coast, the Indian Ocean and possibly the Persian Gulf. Another grouping pattern suggested ties between the coast of Arabia, the Red Sea islands, and the African coast. The African focal point is currently poorly known, but the limited results suggest a trade pattern involving the Red Sea islands and the African littoral as far north as Aqiq and Erkowit (Zarins 1990: 532-5).

Egyptian prehistoric obsidian

The Egyptian participation in the obsidian trade began in the Predynastic and I have suggested a smaller number of potential sources which the Egyptians may have utilized: nine from Arabia and twenty-one from Africa (Zarins 1990: 515-8: Figure 1). The number of archaeological samples reported from Egypt in 1927 was extremely low, numbering no more than 108 objects from the Predynastic through Roman periods (Wainwright 1927: 88-92; Lucas 1942: 274). Subsequent excavation has not appreciably increased this number. My 1988 study focused only on the Predynastic-Archaic periods in principle (Zarins 1989: 361-4).

The introduction of obsidian into Egypt may have taken place initially during Nagada I times, but the material as reported from Hierakonpolis, Abusir el Meleq and Nagada cannot be absolutely dated to the period with confidence. By the succeeding Nagada II period, obsidian is well known (Zarins 1989: 361-5). The Predynastic objects tend to be simple blades/flakes or beads, suggesting that small amounts were used (excluding the dubious Akhmim fishtail knives). Archaic Period finds include small

obsidian vases and bowls from royal mastabas hinting that larger amounts were obtained. During succeeding periods through the New Kingdom, the stone was used principally for pupil eye inlay in statuary, scarabs, and more rarely for small vessels and sculpture (Wainwright 1927: 88, 91).

The initial Renfrew School study analyzed only three Predynastic specimens, two from Upper Egypt (Nagada, Abydos) and one from the Delta (Gerzeh). All three pieces appear to come from Nagada II contexts. All were classed in the 4d Group and thought to have come from Ethiopia or Arabia (Cann and Renfrew 1964: 124). Twelve other pieces, unanalyzed, were also thought to have come from this group. My plot of these samples on the Ba-Zr graph confirms that they belong to the 4d Group. Moreover, since they cluster within a subgroup which I designated as "A", it appears they could derive from the Yemen Dhamar-Reda Field and more specifically from Jebel Isbil. The Egyptian pieces also tie in nicely with archaeological specimens from highland Yemen, the Arabian Red Sea coast, and the Dahlak Islands. Using the Y-Nb plot, we found that the Gerzeh specimen is closely tied to highland Yemeni Bronze Age samples probably deriving from TKY-5 in the Dhamar-Reda Field. The other two Egyptian specimens from Abydos and Nagada cluster with archaeological samples from the Dahlak and Farasan Islands, and coastal Arabian shell midden and upland Saudi Arabian sites as well as Hadhramaut specimens. Summarizing the various trace element data, it would appear that Predynastic Egyptian sources included the upland Dhamar-Reda field in Yemen and the coastal African localities probably on the Buri Peninsula at Arafali (Zarins 1989).

In conclusion, it would appear that Egyptian obsidian was being traded from Red Sea sources as early as the Nagada I-II periods. The analysis of currently available samples suggests that the Egyptians utilized both the Arabian sources (probably through coastal exchange) and Eritrean locales from the Predynastic through the New Kingdom periods. However, it also appears increasingly likely that both Ethiopian and Arabian source obsidians show very similar "fingerprints". In addition, cross-Red Sea trading by local populations during the period 4000-1000 BC may have also caused significant confusion as to the proper source of obsidian samples. Finally, it appears that the Egyptians used sources accessible from the Red Sea itself.

The larger prehistoric Egyptian context

I would not be seriously amiss in stating that obsidian as an exotic luxury good was not the principal item traded across these long distances. Rather, I look upon it as part of a complex, regular, long-distance network. That this network began to operate as early as the Nagada I period (*ca.* early fourth millennium BC) and certainly by the Nagada II period can be demonstrated by archaeological and later epigraphical evidence. In addition, using current ideas in long-distance trading (Renfrew 1975; 1977; Torrence 1986: 102ff), it would appear that the bulk of this long-distance trade operated along the Red Sea rather than overland via the Nile Valley. The traded goods would fit into many

categories (e.g. to judge by the *Periplus*), and not all of them can be recovered by archaeologists. We can, however, document, in addition to obsidian, other non-perishable items such as silver, lapis lazuli, turquoise, galena, malachite, syenite, specular iron and “resins” (see Haldane 1993 for samples recovered from a Mediterranean shipwreck of the XVIII Dynasty period).

The large-scale excavations of Petrie at the late Predynastic cemetery at Nagada (Petrie and Quibell 1896) allow us a glimpse into this long-range trade. The site is only one of a handful of major settlements recovered from Predynastic Egypt and, as such, gives us a substantial amount of data to examine. Fortunately, Petrie’s notebooks for the excavations, assumed to have been lost, turned up recently and have been published (Baumgartel 1970). This important register has aided us in reconstructing the various materials traded over the network. Additional work at the actual settlement has also helped shed light on Predynastic activities (Barocas *et al.* 1982; Barocas 1986). The scale of the actual trade appears to have been rather small if we base our impression on the percentages of reported and recovered items from the graves. From the 2,200 excavated tombs, the percentages for our targeted “exotica” are very low. They break down as follows:

Malachite	44/2200	Lapis lazuli	8/2200
Resins	11/2200	Silver	3/2200
Galena	11/2200	Turquoise	4/2200
Obsidian	5/2200	Specular iron	8/2200

Keeping in mind these percentages, it should also be noted that very few tombs had more than one of these “exotica”. Those tombs in this latter category included tomb 690 with malachite(?) and lapis lazuli beads, malachite lumps, and shell and tortoise armlets/bracelets. Tomb 743 contained, in addition to two obsidian artifacts, malachite, resin, five marble stone vessels, and sixteen clay vessels. Tomb 836 had “garnet”, carnelian and lapis lazuli beads, malachite, resin lumps, a copper dagger, and agate lunates (for a description of the higher status graves in the T-Cemetery, see Baumgartel 1970: 5; Case and Crowfoot Payne 1962: 11). A more detailed break-down for silver, turquoise, lapis lazuli and resins found in the Nagada tombs is provided in Table 1.

These types of objects have turned up at other Predynastic localities, notably Hierakonpolis, Abusir el Meleq, and more recently Minshat Abu Omar (Leclant 1980: 356; Wildung 1984), and most authorities have considered them as foreign to Egypt (Baumgartel 1955; silver: Hassan and Hassan 1981: 81; Stos-Gale and Gale 1981; lapis lazuli: Paley 1965; Crowfoot Payne 1968; turquoise: Gardiner, Peet and Cerny 1955: 3-11; aromatics: Kemp 1982: 723; Groom 1981: 22ff). However, Nagada offers a unique context in which to examine these materials not only within the funerary context but also from the perspective of long-distance trade.

What evidence do we have that the Nagada chieftains/elite interacted with the Red

Grave	Object	Date	Grave	Object	Date
1260	obsidian	SD 34 (Nagada I)	1592	resin lumps	unknown (Nagada II)
743	obsidian	SD 60	B102	resin lumps	unknown (Nagada II)
499	obsidian	SD 53-77	T57	resin lumps	unknown (Nagada II)
140	obsidian	Nagada II	10	resin lumps	unknown (Nagada II)
south town	obsidian	Nagada II	743	resin lumps	unknown (Nagada II)
721	silver	Nagada II?	238	lapis lazuli	SD 36-63 (Nagada I/II)
1547	silver	SD 38 (Nagada I)	624	lapis lazuli	SD 64 (Nagada II)
1257	silver	SD 62 (Nagada II)	667	lapis lazuli	SD 53-78 (Nagada II/III)
399	turquoise	unknown	690	lapis lazuli	SD 52 (Nagada II)
494	turquoise	unknown	1858	lapis lazuli	SD 40 (Nagada II)
1899	turquoise	SD 38 (Nagada I)	.836	lapis lazuli	SD 63 (Nagada II)
B-50-F	turquoise	SD 50 (Nagada II)	1349M	lapis lazuli	SD 80 (Nagada III)
259	resin lumps	unknown	T-5	lapis lazuli	SD 50 (Nagada II)
271	resin lumps	unknown	1247	lapis lazuli	unknown (Nagada II)
1825	resin lumps	SD 35-38 (Nagada I)	198	lapis lazuli	unknown (Nagada II)
836	resin lumps	SD 63 (Nagada II)	822	lapis lazuli	unknown (Nagada II)
1353F	resin lumps	unknown (Nagada II)	T-29	lapis lazuli	unknown (Nagada II)

Table 1 Selected Predynastic finds at Nagada (after Paley 1965; Crowfoot Payne 1968; Baumgartel 1970). Note: SD = sequence date according to the excavator: the higher the number, the greater the age.

Sea area? First, we know that they exploited the resources of the Eastern Desert such as alabaster, diorite, schist/volcanic ash, serpentine, and marble/porphyry for the manufacture of stone vessels (Baumgartel 1970: *passim*). In terms of our resource list mentioned above, malachite was found relatively frequently and was used for metallurgical operations, bead manufacture and eye-paint (Barocas *et al.* 1982: 14). Galena, also found in a number of graves, seems to have been extracted from the Red Sea hills at such sites as Zog el Bohar, Um Anz and Ranga (Hassan and Hassan 1981; Pouit 1989). Hammerstones from Nagada appear to have come from the Dokhan Volcanics of the Red Sea hills (*ibid.*: 79f). From a series of graves at Nagada, coral (1858, 1789, 1822, 1468, 1503), sea urchins (1206), conch shell armlets/bracelets (1234F, 837, 1429, 1587, 1613, 871, 1201, 419, 474, 487), and tortoise shell bracelets (690, 698, 658, 1338F, 1440, 1468, 1723) suggest close ties to the Red Sea littoral. This connection has been reinforced by a brief examination of the Eastern Desert in the Wadi Hammamat region (Zarins, in press). In the area of Lakeita Wells, a Nagada I village revealed the presence of Red Sea shells, copper, malachite and antimony (DeBono 1951: 66-8). In the same area, two later Nagada II-III villages were located which may have also served as work stations. A series of craft activities were performed here such as bead making, copper production, and schist and shell manufacture. A large number of Red Sea shells and sea urchins were found as well (*ibid.*: 69-73). Further eastward in the Wadi Hammamat another Nagada II site was found serving principally as a work station for the production of schist bracelets (*ibid.*: 75-8). Along the Red Sea coast itself, only shell remains and scattered

tumuli suspected of belonging to the Nagada II period have been found to date (*ibid.*: 83-5; Murray and Derry 1923).

Trade routes to the Red Sea

I have already shown that southern Red Sea obsidian sources may have been exploited as early as the Nagada I period based on obsidian finds in Egypt itself. Since the obsidian trade was already well established in the southern Red Sea by 5000 BC, it would appear that the Egyptians had tapped into an already existing trade network exploiting both sides of the Red Sea. In addition, it appears unlikely that materials coming from Southwest Asia such as lapis lazuli, and Red Sea goods such as aromatics, obsidian, and silver/galena, moved independently of each other. Thus, they would arrive in the Nile Valley as part of a consignment or official expedition (for the complexity of goods moving in the Red Sea at a later date, compare the *Periplus*). Discounting the inland route through the desert and up the Nile Valley because of local oppositional groups (Kemp 1982: 723), I would suggest that the bulk of the trade moved along the Red Sea coasts (for the type of trade mechanisms involved in maritime situations, see Renfrew 1975: 45).

Therefore, by the end of the Nagada I period, regular routes had been established from the Nile Valley eastward through the Hammamat to the Red Sea coast. This suggestion has been prompted both by the recovery of exotica from Nagada I period sites along the Nile valley and by the evidence found in the Eastern Desert itself. Another piece of evidence strongly points to the idea that a sea route was established to the Red Sea in the Nagada I or early Nagada II period. The artistic depiction of ships in the Eastern Desert should be regarded as a clue to the preferred routes to the Red Sea. The following table establishes a selected list of Eastern Desert site locations with multiple Predynastic ship drawings.

Site no.	2	4	5	6	10	14	15	16	18	19	26	28
Number of ships shown	6	2	6	2	2	2	4	3	13	2	17	2

Table 2 Selected Eastern Desert localities with multiple ship depictions (after Winkler 1937; 1938)

Much has been made of the boat typology and the internal chronology of the scenes themselves (Winkler 1938: 25-6, 28; Huyge 1984; Helck 1962; Davis 1978). However, here we would like to emphasize that the trade pattern through the Eastern Desert which is illustrated in later hieroglyphic accounts must have had its origin in the Predynastic Period (for the Middle Kingdom Henu account, see Breasted 1906: 208-10; Saleh 1973: 372; for the Wadi Gawasus stelae and the recently discovered Middle Kingdom Red Sea inscriptions, Sayed 1977; 1978; 1979; 1980; 1983; for the New Kingdom Papyrus Harris, Nibbi 1975; Breasted 1906: 203f; for a recent, convenient summary, Lyons 1988). The

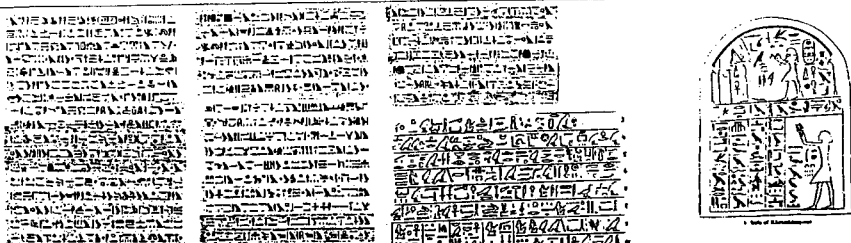
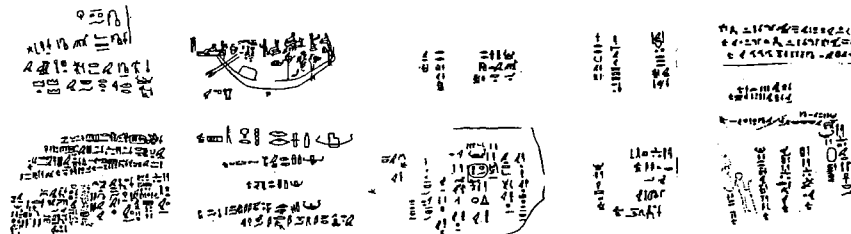
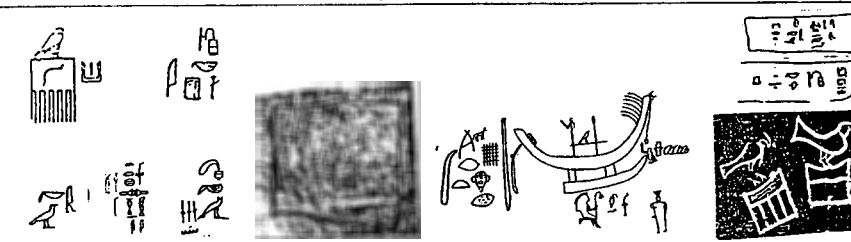
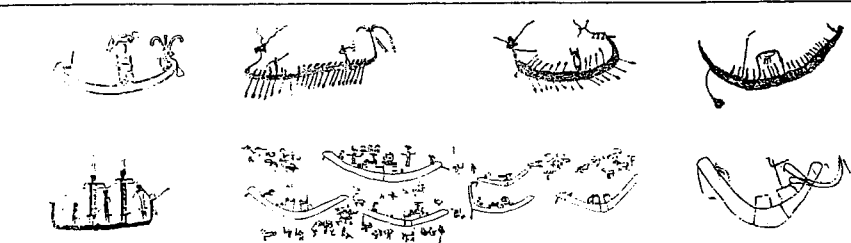
<p>MIDDLE KINGDOM, DYNASTY XI-XII</p> 	<p>1700 B.C.</p>
<p>OLD KINGDOM, DYNASTY III-VI</p> 	<p>2100 B.C.</p>
<p>DYNASTY I-II</p> 	<p>2700 B.C.</p>
<p>NAGADA I-III</p> 	<p>3000 B.C.</p>

Figure 2 The evolutionary development of political authority in Egypt based on materials recovered principally from the Eastern Desert: Nagada I-III (after Winkler 1938; Quibell and Green 1902; Hoffman 1982); Dynasty I-II (after Goyon 1957; Winkler 1938; Zaba 1974); Old Kingdom (after Goyon 1957; Bell et al. 1984); Middle Kingdom (after Sayed 1977; Couyet and Montet 1912).

depiction of Predynastic ships in this region served the same function as the later evolved inscriptional material did, *i.e.* as proof of authority and the conduct of long-distance trade by regional rulers. The ship depiction served as a symbolic signal of authority at the pre-state level. It is merely the first stage in the gradual evolution of continued political symbolism along this route to the Red Sea (Figure 2). Therefore, if we combine this evidence of Red Sea navigation with our earlier assertions of southern

Red Sea obsidian procurement, we can conclude that the Egyptians made regular expeditions to the Red Sea perhaps as early as the Nagada I period (Kaiser 1961: 19, n. 3; Tutundzhic 1979: 656).

Regardless whether the boats involved were papyrus or wooden sewn boats (Landstrom 1970: 11-22; McGrail 1981: 49; Huyge 1984: 233; Haldane 1987:1), the process involved dismantlement and transport over the Wadi Hammamat to the Red Sea (for Predynastic boats being dragged overland and their possible ritual interpretation as part of the Seker or Henu festivals, see Lyons 1988: 20-2). Since Nagada lies on the west bank of the Nile, the port of departure for the Red Sea was Coptos, or a site near its vicinity (Trigger 1982: 516; for the Predynastic Period at Coptos, see Frankfort 1956: 137, n. 27; Kaiser 1961: 18f; Emery 1961: 125; Williams 1988). From Coptos, several routes to the Red Sea were available based on the recovered boat drawings in the Eastern Desert (Figure 3) and to judge from the number of depictions at key sites, it appears that a direct route through the Hammamat was the most popular (Sites 2 and 5 lead to the Qoseir region). A more southerly route branched off at Lakeita Wells and followed the Wadi Gash (Site 18) or Wadi Zeidun/Abu Wasil (Site 26). A more northerly route followed Wadi Atwani (Site 15) from Lakeita Wells. Separate routes further to the north from Coptos perhaps leading to an ancestral Sawwu and the Sinai have also been suggested (Kitchen 1972: fig. 5; O'Connor 1982: 929). The lack of formal facilities on the Red Sea and the absence of Predynastic remains can be explained by a lack of survey along the

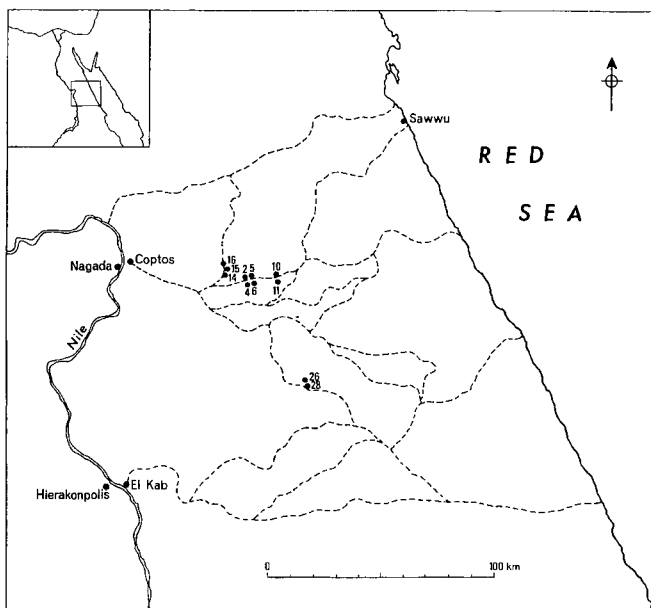


Figure 3 Suggested routes to the Red Sea in Upper Egypt during the Predynastic and Archaic periods (principally after Winkler 1938; Bell et al. 1984)

Red Sea coast, the nature of the expeditions themselves, the method of boat construction, and the type of operations actually conducted at the “ports” (for Middle Kingdom and later historical parallels, see Sayed 1977; 1983; Whitcomb and Johnson 1979: 1-8).

A similar pattern can be deduced from the data at Hierakonpolis, and even perhaps Abydos, (see El Sayed 1979). At Hierakonpolis, obsidian was found in the Cemetery 6 (HK-6 tomb 11) and Cemetery 29 areas (HK-29, structure II) (Zarins 1989: table 2 and references). Within the context of other exotic material found at Hierakonpolis such as lapis lazuli, we can again conclude that expeditions were sent to the Red Sea. Since Hierakonpolis also lies on the west bank of the Nile, the corresponding east bank centre would have been El Kab, Nekheb (for the Predynastic remains here, see Hendrickyx 1984: 225-8; O'Connor 1982: fig. 12.28). The routes to the Red Sea can again be reconstructed based on the location of boat drawings, found principally along the modern Edfu/Mersa Alam road (Huyge 1984; Zaba 1974: 225, 237, 239, 241). Such a reconstruction may also shed light on the well-known scene in Tomb 100 at Hierakonpolis often interpreted as depicting a battle between foreign and native elements along the Nile in Upper Egypt (Case and Crowfoot Payne 1962). It would appear most likely the scene depicts rivalry for the control of trade through the Eastern Desert to the Red Sea.

The presence of such exotica as obsidian and lapis lazuli at Lower Egyptian sites *e.g.* Abusir el Meleq and Gerzeh (Zarins 1989: table 2) may call for a different explanation. Direct trade through the Sinai seems the least likely explanation despite repeated assertions (Mellaart 1982: 8; Trigger 1982: 537; Emery 1961: 204) since contemporary Sinai sites have not yielded either material (Bar-Yosef *et al.* 1977; 1986; Rothenburg 1970; 1973; Beit-Arieh 1981; 1983; 1986). Whether the obsidian and lapis lazuli came from trade with Upper Egypt or were the result of direct expeditions to the Red Sea remains to be studied.

The Archaic period

With the consolidation of competing chiefdoms by the early third millennium BC, the importation of exotica from the Red Sea region was greatly accelerated. Contact with the Eastern Desert was intensified as revealed by the massive presence of stone vessels in the royal mastabas (alabaster, diorite, schist/volcanic ash, marble/porphyry and serpentine; *cf.* Emery 1961: 203). The recovery of millet from Dynasty I context (Emery 1961: 237) as well as resins points to far south connections. Analysis of the gold sceptre of Khasekhemui (Dynasty II) revealed a unique antimony presence. Such a combination has been traced to Eritrean gold and again supports the contention of long-distance trade with the southern Red Sea (Ogden 1976: 142). Lapis lazuli, turquoise and other exotica increased in volume (Emery 1961: 204, 214). Unfortunately, from Archaic Egyptian contexts, we have only five provenanced obsidian pieces (Zarins 1989: 364), but in contrast to the earlier Predynastic specimens, these come from vase or stone vessels, not blades or flakes. Only one specimen was run for analysis by the Renfrew group (*ibid.*:

table 2.37, attributed to late Dynasty I). In a Ba-Zr plot (*ibid.*: fig. 6) this object allies itself with the low end cluster of group 4d (subgroup A) and this suggests the utilized source was the same one as in the Predynastic period. The Y-Nb plot (*ibid.*: fig. 7) ties the object into subgroup K, which suggests that the Arafali source in Eritrea was the actual source used.

As Davis (1986) has observed, the rulers of this period continued to promote this long-distance trade for prestige and political purposes. Hieroglyphs were used to label objects obtained by royal trade for either secondary trade, storage or funerary purposes. Kings and high officials (“elite seniors, upper-echelon patrons”) accumulated quantities of valuable items through trade and exploration. This idea is supported by the tendency to replace the boat drawings by either *serekhs* (symbols of royal authority) or very brief inscriptions of names and/or titles (Figure 2). Two good examples include the Narmer *serekh* in the Wadi Gash and that of Djet in the Wadi Miah. Thus, from this period we have no real “inscriptions” which would shed light on the Red Sea/Punt trade. Historical data illuminating this trade do not begin until the Old Kingdom. For the later, Old Kingdom naval titles found in the Eastern Desert and the Sinai, see Helck (1954: 74, 101), Säve-Söderbergh (1946: 72-80), Bell, Johnson and Whitcomb (1984: 40, 42-3), Gardiner, Peet and Cerny (1955: 63f), and Giveon (1983: 50). In two cases, researchers have suggested that boat depictions in the Wadi Hammamat may be contemporaneous with either Horus figures or Archaic period inscriptions (Goyon 1957: 12f; Winkler 1938: 25). In these cases, we may regard the Archaic period material as a transition from the Nagada boat drawings to the true inscriptions of the Old Kingdom.

In any event, boat depictions attributed to the period suggest that sea-faring was known. Boat-pits found at Helwan (Saad 1969), Saqqara (Emery 1961: 54, 56) and Abydos (*ibid.*: 131, 133; Landstrom 1970: 23-5) readily call to mind the later pits associated with Khufu at the Great Pyramid (Lipke 1984; 1985; Jenkins 1980). Wooden fragments from Dynasty I tomb context at Tarkhan (Petrie *et al.* 1913: pls 9-10) have been interpreted as boat fragments (Vinson 1987: 67, 77-9 and fig. 8). One well-preserved boat from the tomb of Den was described in the excavations at Saqqara (Emery 1955: 500; 1958: pls 44, 66, 68). Since cedar has been recovered from Dynasty I context (Emery 1961: 204), some authorities consider that the *Kpnwt* boats of Punt fame (Sayed 1978: 71, n. 7; 1980: 156; 1983: 29f, 36f) may have already been used in the First Dynasty (Säve-Söderbergh 1946: 48, n. 5).

Textual evidence

As we would have expected, the Egyptian desire for the exotic materials mentioned above continued well into the historical periods. Unfortunately, our interpretation in historical texts of which materials were meant remains frustratingly elusive. For example, *mfk3t* has often been translated to mean “turquoise”, “malachite” or both (see Gardiner, Peet and Cerny 1955; Helck and Otto: VI, 789-95). *Hsbd* is generally regarded as lapis lazuli

(*ibid.*: III: 937f) and *ntyw* as myrrh/frankincense (*ibid.*: IV, 275f); for *sntr* as terebinth, see Haldane (1993: 353). However, since obsidian was either rare or insignificant in the later periods, the Egyptian term for it remains controversial. According to several sources, there is no generally accepted single term. Rather, it may be subsumed under a larger, contrastive one. In the Wadi Hudi inscriptions of the southern Eastern Desert, the term *mnw hd* is read as “white quartz” and its opposite as *mnw km* (Sadek 1980: 48f). This latter term has been translated to mean both “smoky, dark quartz” and “obsidian” (Harris 1961: 111, 228; Helck and Otto: IV, 549f; V, 50). Another alternative considered by Cerny was *k3f* (as in *pss k3f*). However, recent analysis suggests that *k3f* is an archaic term for flint (Fanfoni 1978: 133; van Walsem 1978-9: 229, n. 166; Helck and Otto: II, 210). We would suggest that since the “peak” in obsidian trade lay in the Predynastic and Archaic periods, its proper term in the later historical periods may have become confused or misinterpreted.

Summary

Obsidian as a volcanic glass was deemed highly desirable for its inherent properties as early as the Predynastic (Nagada I-II) and Archaic periods. The sources, which are tied to volcanic eruptions, have been examined only in a very superficial way for the most part. To date, over thirty-two different sources could have been utilized in the southern Red Sea region alone (excluding western Sudan and Tchad). The fingerprint pattern for these sources and their archaeological artifacts may be retrievable under proper chemical and laboratory examination. Currently, it appears that extensive Red Sea obsidian trade existed both in Arabia and Africa as early as 5000 BC. This obsidian trade can be seen as merely a small part of a much larger trade pattern involving East Africa, Arabia, and the Indian subcontinent. Egypt (and Mesopotamia) began to participate in this trade within a prehistoric context and developed long distance networks. While we have focused on the particular trade in obsidian, such items as silver, lapis lazuli and incense were probably more highly desired items. The Egyptian trade emanated from principal centres in Upper Egypt such as Nagada and Hierakonpolis. These centres controlled “port cities” on the eastern side of the Nile such as Coptos and El Kab and mounted necessary expeditions across the Eastern Desert to the Red Sea to obtain the necessary “exotica”. Shipping on the Red Sea was considered necessary, and appropriate shipbuilding techniques may have been developed as early as the mid third millennium BC. Maritime travel was undertaken to obtain trade goods as far south as Punt and God’s Land and north to Bia (Sinai/Arabia). The obsidian sources in both highland and coastal Arabia as well as along the African coast were utilized according to analyses carried out by the author and others. The pattern which was established continued throughout the Old, Middle, and New Kingdoms, with perhaps Papyrus Harris, written under Rameses III (1198-1166 BC), marking the end of a two and a half millennia-old tradition.

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Bronze Age Maritime Trade in the Indian Ocean: Harappan Traits on the Oman Peninsula

by BURKHARD VOGT

Long distance trade in bulk commodities was usually considered too costly and time-consuming an enterprise to be carried out overland and thus, with the prerequisite technological, nautical and organizational skills, sea transport was more apt and profitable. Thus the commercial links between Mesopotamia and India during the third millennium BC were basically a maritime venture. As part of a larger Bronze Age World Economy, those interactions can be divided into a number of sub-circuits of which one was the exchange between the Indus valley and the Arabian peninsula.

Archaeological finds of alleged Harappan origin are known from several sites in the Gulf area. They fall into two regional groups of which one is the sphere of the Dilmun-related Upper Gulf assemblage, and the other the Makkan-related Omani horizons of the so-called Umm an-Nar and Wadi Suq periods. The two spheres are not defined exclusively by the respective find contexts but they also imply some fundamental differences.

Competition for outlet-markets:

Harappan versus Omani influence on Bahrain?

In the coastal areas of the Upper Gulf archaeologists have come across a small number of stamp seals of markedly Dilmunite shape and size but ornamented with Indus script and motifs (Kjaerum 1986: 270). Clearer, however, was the discovery of cubic chert weights in the standard of the Indus valley which were found in the "customs area" of Qal'at al-Bahrain (Bibby 1970). In this particular case we are dealing with an abstract system which is not accidental and which may have required some sort of central implementation. The Indus weight system was adopted by the Dilmunites and later on became known to the Mesopotamians as the "standard of Dilmun".

Apart from these two groups of artifacts Harappan influence or imports showed up only sporadically, here an Indus-inspired copper or bronze animal figurine (During Caspers 1987), there some isolated potsherds. The latter have been compared with Indus

pottery (Frifelt 1986; Højlund 1986; 1989), but these parallels were frequently rejected with special reference to Iranian wares (Larsen 1983: 227) and the increasing acquaintance with painted eastern Arabian ceramics (Zarins *et al.* 1984).

In the proceedings of the Bahrain Through the Ages Conference (Al Khalifa and Rice 1986) many papers deal with chronological problems and the impact of foreign relations. In general the occurrence of Harappan influence is undisputed but since it is not sufficiently quantifiable the different authors reach diverging interpretations on its intensity and intrinsic momentum. A critical assessment of the archaeological evidence may eventually provide a comparatively limited corpus of Harappan objects hardly exceeding the number of comparable artifacts found in other areas of the Near East.

Whatever a more detailed study of the Harappan traits and imports may come to, there seems to be a broad consensus that these manifestations turn up in controlled excavations in rather late contexts. In the most up-to-date compilation of the stratigraphic and material sequence of Qal'at al-Bahrain, Bibby (1986: 110, 114) recorded the presence of the Indus weights from terminal City I and early City II levels for which most archaeologists accept a late third/early second millennium BC date. This is the time when Mesopotamian commercial activities in the "Lower Sea" reached their peak. Possibly of larger cultural importance, however, is the occurrence of third millennium BC Omani artifacts in the Upper Gulf area. To my knowledge, though not identified in the extreme north (Failaka) and the Qatar Peninsula, they have been recovered in varying quantities from the Eastern Province of Saudi Arabia and from Bahrain.

From Qal'at al-Bahrain Bibby (1986: 110f) mentions an unspecified number of Oman-related softstone vessels and a corpus of pottery he considers as deviating from the common Dilmunite productions and strongly recalling typical Umm an-Nar wares. Without a more concrete percentage distinction those wares accounted altogether for about 50% of the total ceramic inventory of City I. It is specially remarkable that they are restricted only to the levels of City I.¹

Repeatedly it has been cautioned that the dating of City I and II will largely depend on a safer chronological fixation of the Umm an-Nar culture (*ibid.*: 115). A respective sequence is well established at the Omani Bronze Age key-site Hili-8 (Cleuziou 1989b); its limits are defined by a consistent series of radiocarbon dates. Due to the inherent range of radiocarbon dates between two statistical extremes, stylistic parallels of artifacts were sought for corroboration, predominantly from controlled excavations both in Iran (*e.g.* Bampur) and Bahrain. Methodologically we have thus closed a vicious circle because Bampur has been indirectly dated via Umm an-Nar and Qal'at al-Bahrain.

A rather strong intrusion into an indigenous culture is certainly one of several explanations for Umm an-Nar traits in Qal'at al-Bahrain (Bibby 1986: 114), but one has

¹ Note that for levels 22-26 the City I Umm an-Nar wares are stratigraphically associated with three Harappan weight stones, three circle-ornamented softstone fragments, and a socketed copper or bronze spearhead. Seals of any kind are absent (Bibby 1986: 110).

also to point to the repeated finds of pure Umm an-Nar assemblages, for instance in the necropolis of Hamad Town (Lowe 1983) and in eastern Saudi Arabia (Zarins, n.d.). That leaves us still with the possibility of an extension of the Umm an-Nar cultural sphere as far north as the island of Bahrain.² It may apply for only a restricted period of time to be later overlapped and finally absorbed by the Dilmunite cultural horizon. On the other hand it could well have been Oman's interest to be physically present in the north to promote, facilitate and control the shipping of copper and other products to Mesopotamia. This was certainly the case as early as the Early Dynastic III or even Early Dynastic II period (Berthoud and Cleuziou 1983: 243) when Oman had the monopoly of copper supply to Mesopotamia.

The archaeological evidence for Dilmunite exports to the third millennium BC Oman peninsula is quickly summarized: so far nothing can be referred to unless one thinks of two ovoid Dilmun jars recovered from the mixed contents of two Umm an-Nar tombs in Wadi Munay'i (C. Phillips, personal communication) and at Shimal (Vogt, n.d.). But one may also ask if Dilmun had her own products to offer which could have been of any interest to the Makkanites. An Omani presence on Bahrain could have certainly ensured direct trade transactions with Mesopotamia after prior contacts had been made in the eastern province of mainland Arabia many generations or even centuries before. Whatever the Mesopotamian texts tell us about goods labelled Dilmunite, it was hardly a producer of commodities which were not likewise and simultaneously produced and offered both by Makkan and Meluhha. That would certainly give a hypothetical explanation for the scarcity of Dilmunite finds in both Oman and the Indus valley. Dilmunite "bits and pieces" possibly reached those areas without a pre-planned destination as a sort of "unpaid load".

The economic orientation and accessibility of the Oman peninsula before the Harappan intrusion

The Oman peninsula throughout the ages was open to foreign impact. For yet unknown reasons it was at first exclusively Mesopotamian influence which can be traced in the form of al-'Ubaid pottery exported as far as the Straits of Hormuz (Vogt, in preparation).³ That applies also to the early centuries of the third millennium BC when cultural traits

²Zarins (n.d.) reviews Piesinger's thesis (1983) with special emphasis on eastern Saudi Arabia's external relations. Presenting a number of important archaeological sites between Tarut and Umm an-Nussi, he provides a rich body of Oman and South-East Iran related finds such as different Umm an-Nar wares, black-on-grey and incised grey wares, softstone productions, *etc.*, coming from settlements and cemeteries. With the lack of an internal chronology, "definite horizontal associations" with Early Dynastic I-III Mesopotamia (although resting largely on typological grounds) are made out. Pottery in particular is supposedly imported or locally imitated. Unfortunately there is little mention of the association with local ceramics. As long as detailed publications are pending, the different inventories seemed to be heavily mixed up; in respect to the Umm an-Nar sequence, Zarins' dating is probably too high.

³For fragments of a polished grey ware vessel, the only pre-Bronze Age ceramic remains from Ras al-Hamra (Biagi and Nisbet 1984: 455), parallels from the central Iranian site of Yahya, period VC, have been cited.

of Jemdet Nasr/Early Dynastic I Mesopotamia became manifest in the pottery and miscellaneous small finds of the Omani Hafit assemblage (During Caspers 1971; Frifelt 1970; Potts 1986a).⁴ In the course of the first half of the third millennium BC, major changes took place in the principal orientation of the Oman peninsula towards the exterior. With the formation of multiple core vis-à-vis periphery areas in the Bronze Age Near East (Kohl 1987), Oman enlarged its access options to other regions and was bound in a widespread network of cultural and economic interrelations. Especially during the Umm an-Nar period (*ca.* 2700-2000 BC) the area was very strongly oriented to south-eastern Iran, to which it might have been closely related as either the smaller or “the greater Makkan”⁵ and to the Indus valley. An indigenous Omani culture emerged adopting to some degree material (and non-material) achievements of other areas. Mesopotamian influence did not cease but was predominantly constricted to coastal Oman as demonstrated by imported Mesopotamian pottery on Umm an-Nar (Mynors 1984) in contrast to isolated specimens in the interior.⁶

For a long time the site and settlement patterns of the third millennium BC Oman peninsula appeared rather unbalanced: sites were prevailingly located in the Oman mountains and, due to intensified surveys, in the coastal area of south-eastern Oman. Since then, and in addition to the island of Umm an-Nar on the Arabian littoral of the Gulf itself, a number of sites have been recorded (Figure 1) and studied, starting from Jabal ad-Dhannah and Ras al-Aish in the west (Vogt *et al.* 1989), encompassing Ghanadah (al-Tikriti 1985), al-Qusais (al-Tikriti, personal communication), Ajman (Kay 1986), the Umm al-Qaiwain area (Potts, n.d.), and ending in the north-east at the Ras al-Khaimah coast in the Jazirat al-Hamra area (Vogt, in preparation) and at Shimal (Vogt, n.d.). Except for Umm an-Nar, Umm al-Qaiwain and Shimal, occupational evidence is usually meagre, reflecting rarely more than simple camp or fishermen’s sites or some isolated tombs. Although the coastal reconnaissance is still incomplete, the locations reflect a pattern of roughly 20 to 35 km intervals. That pattern may somehow match with the first scheme of coastal “stop-over” seafaring as postulated by During Caspers (1971) for vessels bound for the Upper Gulf and Mesopotamia, and the reverse.

A similar pattern to is be expected on the Batinah coast of the Arabian Sea but, especially on the Dibba to Sohar section, there has so far been only a little survey and excavation activity.

⁴ Imprints of sorghum from an early third millennium BC context at Hili-8 (Cleuziou and Costantini 1983) and from an earlier Ras al-Hamra assemblage (Anon.1983) were related to a possible East African origin of the crop.

⁵ Heimpel (1987: 37) refers to the existence of two Makkans of which only one, *i.e.* the “greater Makkan”, is mentioned in the texts. He considers them as two harbours but not as two distinct areas. NB: a similar formula has been recorded for Dilmun, *i.e.* a smaller and a greater Dilmun.

⁶ The number of Mesopotamian or Mesopotamia-related goods in the Omani hinterlands during the second half of the third millennium BC is rather insignificant. We are dealing with solitary potsherds from the Hili-8 pottery sequence and some other minor objects.

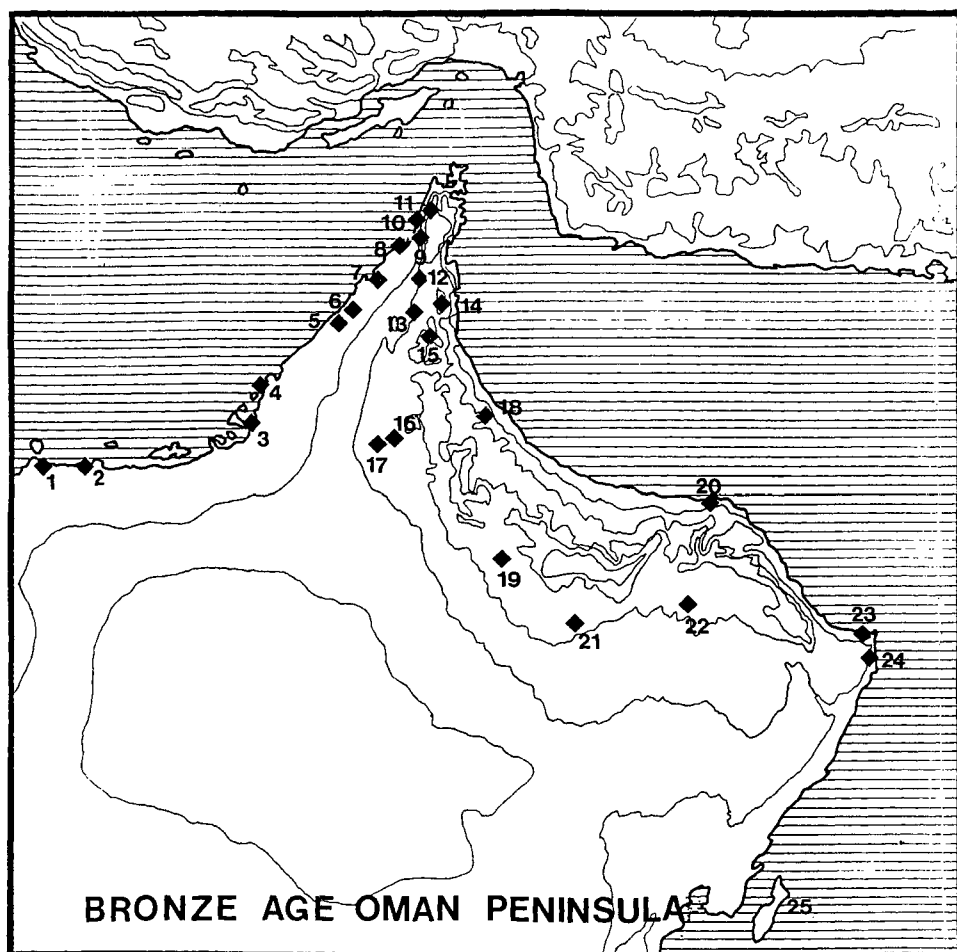


Figure 1 Bronze Age sites mentioned in the text: 1—Jabal ad-Dhannah 2—Ras al-Aish 3—Umm an-Nar 4—Ras Ghanadah 5—Al-Qusais 6—Ajman 7—Ras al-Hamra 8—Jazirat al-Hamra 9—Shimal 10—Dhayah 11—Ghalilah 12—Tell al-Khatt 13—al-Ghail 14—Asimah 15—Wadi Ashwani 16—Hili 17—Qattarah 18—Wadi Suq 19—Baat 20—Ras al-Hamra 21—Wadi Bahla 22—Wadi Samad (Maysar) 23—Ras al-Hadd 24—Ras al-Junayz 25—Masirah

Harappan and Harappa-related goods in the Oman peninsula

Items of supposed Harappan provenience or inspiration have been discovered from all over the peninsula. As already mentioned they originate from archaeological contexts of two major periods, *i.e.* the Umm an-Nar period and the Wadi Suq.

Compared to the respective finds in the Dilmunite catchment area this inventory is more comprehensive and informative about the nature and the intensity of intercultural relations between Makkan and Meluhha. It may reflect indirectly Omani needs for basic commodities on the one hand and for so-called luxury items and finished products on the other.

Carnelian and etched carnelian

The technique of etching carnelian was for long regarded as an extremely valuable marker of the Indus civilization. As a matter of fact, the reasons why the exclusivity and monopoly of carnelian etching was tacitly and commonly attributed to the Harappans are understandable and still valid but in the light of recent discoveries not really conclusive (Reade 1979: 23). Was it the predominant occurrence of etched carnelian within the Indus Valley complex paired with the discovery of beadmaking workshops (*e.g.* at Chanhu-daro) and the still living traditions of lapidary skills in present-day India, or was it simply the availability and accessibility to chalcedony resources as they are still exploited in Gujarat and Kathiawar (Alchin 1974: 95)?

Reade (1979: 5, 23) mentions more than seventy etched carnelian beads from the south Mesopotamian city of Ur and by compiling further non-Harappan Bronze Age evidence even advocates the installation of lapidary workshops in Mesopotamia technologically (versus stylistically) imitating indigenous Indus Valley products. He also refers to south-east Iranian chalcedony resources (see also Tosi 1969: 371) and those north of Mundigak in Afghanistan (Reade 1979: fig. 5) as potential suppliers of raw material. Already as early as 1975 Whitehouse had published a short notice on chalcedony/carnelian showings in the Gulf area. He quoted a source in Arabia (Beale, cited by Whitehouse 1975) but he also reported carnelian nodules from the Upper Gulf Bushehr peninsula. Stressing the long habitation of the peninsula and referring to the Sasanian occupations at Rishahr and Siraf (including medieval deposits), with raw material and related working debris, he warned against regarding carnelian objects from the Gulf or adjacent regions as exports solely from India.

As for the Oman peninsula, a lump of unworked carnelian was recovered from a second millennium BC collective tomb at Shimal (unpublished; from tomb Sh 1, stored in the National Museum of Ras al-Khaimah) and also from the nearby excavations at the medieval Islamic town of Julfar (unpublished, stored in the National Museum of Ras al-Khaimah). Furthermore within the Bronze Age site of al-Khatt, a piedmont oasis some 25 km south of Ras al-Khaimah town, a Qatar D-related flint site was recorded (Vogt, in preparation). The locality produced a number of finished and unfinished tools as well as flakes of carnelian associated with a dozen pressure-flaked arrowheads. It was only natural to assume a carnelian source in the vicinity. Eventually a rather extensive source area (near al-Ghail) was briefly visited along the al-Khatt-Manama road approximately 40 km south of Ras al-Khaimah. At least two out of several low outcrops already in the dune-belt of the sand desert bear clear traces of opencast mining and quarrying. Banded agate and carnelian of different varieties and qualities appear in thick veins⁷ and are easily accessible.

⁷ A first rough superficial reconnaissance led to the discovery of a presumed workshop area, and a number of pre-Islamic tombs and medieval pottery. A subjective selection and identification of a number of rock samples was kindly confirmed by geologist Susanne Renner.

On the Bronze Age Oman peninsula, etched carnelian beads have been discovered exclusively in funerary contexts. In Umm an-Nar Cairn II only one, not very outstanding bead was found (Reade 1979: 11, type B1) which by means of the general composition of the grave furnishing can be put in the last quarter of the third millennium BC (Vogt 1985b: 181). Two parallels from Mesopotamian Kish date to the Late Early Dynastic IIIB-Early Akkad periods, and one from Nippur was found with an Ur III burial. More frequently etched carnelian beads occur in pairs or small groups. In Hili North tomb A (Cleuziou and Vogt 1985: fig. 5.1-2) two specimens have been discovered. One of them, Reade's type D8, is dated to about 2300-2150 BC with reference to finds from Ur, but was also in levels II-III at Lothal. The other one, a black-on-white variety, corresponds with type D10, again known from the later graves in the Ur cemetery and similar examples from Chanhudaro (*ibid.*: 258). The above comparisons match well with the final dating for tomb A. The Umm an-Nar tomb B at Hili North yielded some five etched carnelian beads (unpublished; A. al-Haj, personal communication) and judging from the grave furniture they are most certainly contemporary with tomb A.

The Umm an-Nar tomb Hili B produced one oblong barrel-shaped bead with an etched dotted honeycomb design unparalleled in Mesopotamian context but with some affinities in the Indus Valley (During Caspers 1972: fig. 1.28-9). It cannot be dated *per se*, but Hili B's funerary inventory is roughly contemporary with the Umm an-Nar tombs A and B at Hili North. The Umm an-Nar tomb Sh 222 in Shimal yielded two etched beads (on display in the Ras al-Khaimah National Museum), one of them representing the extremely rare method of black-on-red etching (During Caspers 1972: 85). Belonging to Reade's type E1/E2 (1979: 20f) a *terminus ante quem* of 2100 BC can be assumed.

So far this is the evidence from Umm an-Nar related contexts. All tombs mentioned above belong to the final step of the evolution of Umm an-Nar funerary architecture (Vogt 1985b), and as a group are to be set somewhere between 2400-2300 BC and 2100-2000 BC.

When we come to consider the Wadi Suq related etched carnelian we deal with fewer specimens. Its presence is known from the Qattarah tomb (National Museum, Al-Ain) and from a collective burial at Dhayah (on display in the Ras al-Khaimah National Museum). At least the latter can be compared with a similar bead from Susa which Amiet (1986: ill. 92 bottom, third from left) describes as "tardive".

Until now etched carnelian has not been encountered on Bronze Age sites in the Oman mountains and east of them, whilst plain carnelian (with other varieties of chalcedony) was in use all over the peninsula. It makes a local mastery of carnelian etching more unlikely although not impossible. Most of the types mentioned above were supposedly very popular in Mesopotamia and not impossibly manufactured there or for that particular taste (Reade 1979). With the sea-routes passing the Emirates Gulf littoral, the few aforementioned etched carnelian beads might have gone astray in the western piedmont area of the Oman mountains.

Mesopotamian texts are fairly instructive in that particular respect. During the earlier phases of the interregional trade the import of semi-precious stones was hardly worth mentioning (whatever the archaeological evidence may be). Such imports reached a “remarkable” level only with the reign of Gudea of Lagash (twenty-second century BC) when lapis lazuli and carnelian were said to have been imported from Meluhha and/or via Dilmun (Heimpel 1987: 51f, 60). Interestingly enough the first was purchased as raw material, the second as finished beads. In addition, however, the texts also refer to other semi-precious stones which, to deduce from their general context, do certainly include varieties of chalcedony not yet linguistically identified (“jasper, agate, onyx”) which are supposed to have come through Dilmun and/or Makkan. But these administrative texts were issued during the reign of the dynasty of Larsa at a time when the Oman peninsula had just witnessed a major cultural change from the Umm an-Nar to the Wadi Suq period.

Frifelt, in one of her papers (1975b: 57), quoted the appearance of lapis lazuli in one of the cairns on Umm an-Nar. We assumed the same identification for minor lumps of dark bluish stone from the early Umm an-Nar tomb M at Hili (unpublished), but both references still need mineralogical confirmation. We do not feel on safer ground with the identification of other beads which we have repeatedly come across in several Umm an-Nar tombs, that is to say the oblong tubular “bird bone” beads (Frifelt 1975a: fig. 39) which are possibly manufactured from the same material as the so-called micro-beads: baked steatite—*i.e.* a technique mastered in the Indus valley.

Also made of (baked?) steatite are a number of flattened round beads and square or rectangular spacers with a lozenge-shaped section, both groups decorated with incised dotted circles. They come from one of the subterranean long-burials in al-Qusais (Anon. 1975: 56) and a Wadi Suq context in the Shimal SX settlement (Franke-Vogt, in Vogt and Franke-Vogt 1987: fig. 48.15). Another one is a serpentinite variety from a typical Wadi Suq cist in the Samad cemetery (unpublished). Similar finds from Susa were said to be imported from Central Asia (Amiet 1986: fig 100a) and to belong to the early second millennium BC.

Combs

At least two Mesopotamian texts refer to combs (one of ivory) imported via Dilmun to Ur during the Larsa Period (Heimpel 1987: 85). With Dilmun mentioned they must have been produced from Indian ivory. Two specimens are known from Oman, one possibly of bone from the Wadi Suq collective burial Sh 99 in Shimal (Kästner and Vogt, in Vogt and Franke-Vogt 1987: fig. 36.16) and a more elegant ivory one from Ras al-Junayz (Cleuziou and Tosi 1986: fig. 22). Typologically the first recalls wooden combs from Shahr-i Sokhta (Tosi 1969: 365, figs 210-2) whereas the second one has very strong parallels in Mohenjo-daro and Chanhudaro (Cleuziou and Tosi 1986: 11).

Shell and shell objects

Until the discovery of late third millennium BC shell working at Ras al-Junayz (Cleuziou and Tosi 1987: fig. 16) one would have considered certain kinds of shell artifacts, rings in particular, a product of possible Harappan provenience. They have been known from late Umm an-Nar burial contexts (such as tomb A in Hili North), but predominantly from Wadi Suq collective tombs, as for example at Shimal (Vogt and Franke-Vogt 1987: fig. 36.5-7) or Qattarah. Kenoyer's work (e.g. 1984) has given us a much better understanding of Harappan technical skills and the operational process of shell-working industries. Its implantation into Oman's crafts cannot be doubted and may provide vivid evidence for relations. The necessary resources were available almost everywhere along the coasts. Moreover, shell-fishing remained a basic way of subsistence at least until the mid first millennium BC (or even the Middle Ages) in places like Shimal. Gensheimer (1984) noted the import of Eastern Gulf and Arabian Sea mollusc species long before the Mesopotamian texts mention any shells, for instance cowrie, as trade goods (Heimpel 1987: 56, 60: *i.e.* early second millennium BC). Furthermore certain species (*Fasciolaria trapezium* and *Lambis truncata*) were "supplied to the Indus workshops from the distant source areas in the Gulf of Oman and ... were used only in the urban centers" (Kenoyer, in Gensheimer 1984: 67, 70). Thus—besides a solitary Omani late(?) *série récente* soft-stone vessel in Mohenjo-daro (Jansen and Urban 1987: Abb. 93)—we deal here with one of the very few indisputable remains of Arabian exports to the Indus Valley.

Metal and metal objects

Coming next to metal and metal artifacts, attempts were made to demonstrate similarities between the respective areas. During Caspers (1970: 261-70) stressed what is, I feel, a rather general resemblance between finds from the upper levels of Mohenjo-daro and a number of copper or bronze weapons from the cairns on Umm an-Nar. More convincing, however, is the case of two swords or daggers (*ibid.*: fig. 16.2-3) with oblong triangular mid-ribbed blades and triply rivetted hilts from the Hili round structure 1059. They come from a grave furnishing which is safely dated into the last quarter of the third millennium BC (Vogt 1985b). A similar dagger (or spearhead?) was later found among the grave goods of cairn X on Umm an-Nar (al-Tikriti 1981: 140; Cleuziou 1978-9: 43, top right). A probable late third millennium BC date for Cairn X has been suggested elsewhere (Vogt 1985b: 176). A more recent discovery of a similar dagger in the Wadi Munay'i (C. Phillips, personal communication; on display in the Ras al-Khaimah National Museum) may corroborate the general dating of this dagger type.

However, a note of caution is to be made as far as a possible Harappan origin for these objects is envisaged. Somehow afraid of the geographical implications, During Caspers (1970: 266) mentioned and—at the same moment—carefully dismissed a comparison with typologically relatable copper finds from Middle Bronze Age tombs

in Palestine. Incorporating the more recent metal finds from Umm an-Nar made by the Iraqi Mission in the mid-seventies (Cleuziou 1978-9: 43, top right) and coming back to weapons for example from Jericho, Tell el-Ajjul and Megiddo (*e.g.* Kenyon 1970: fig. 24) one is certainly surprised by the degree of similarity between the objects from both regions. Their attribution to the Early Bronze-Middle Bronze Intermediate Period (*ibid.*: 137) gives us chronological limits of roughly 2300-2000 BC. A possible Levantine connection with the Oman peninsula has already previously been outlined although in the context of different types of Wadi Suq and Early Iron Age weapons (Vogt 1985b: 260; G. Weisgerber, personal communication).⁸

Besides that alternative interpretation of the metal weapons from the island of Umm an-Nar, one wonders whether there is any clearer trace of Syro-Palestinian influence on the Oman peninsula. To my knowledge there is so far only one artifact which hints even more strongly of that part of the Near East: it is a cylinder sealing on a sherd from the settlement on Umm an-Nar which is now matched by similar impressions from Ebla (Tell Mardikh Palace G) and tentatively dated to *ca.* 2400-2250 BC (Amiet, in Potts 1992).

Coming back to metal objects of possible Harappan origin, we should also list a knife blade from the early second millennium BC Khatt-type tomb Sh 99 in Shimal (Kästner and Vogt, in Vogt and Franke-Vogt 1987: fig. 36.1) which possesses a short perforated tang and a slightly curved blade. One edge of it was used for hacking and chopping (J. Kunkel, conservator, personal communication) as is to be assumed for typologically similar Indus knives. But due to the poor preservation of the blade the comparison will remain vague. At one of the Ras al-Hamra middens (RH 5) the Italian team documented the so-called metallic horizon which, although aceramic, is roughly radiocarbon dated to about 2000 BC (Anon. 1982: 228). Among the metal items was a knife of supposed Harappan origin; its publication is still pending.

Apart from copper and copper alloys there are a few metals known from Bronze Age contexts such as gold, silver, electrum and lead. It is not sure if any of these were exploited on the Oman peninsula. According to the Mesopotamian texts, at least tin and gold were supplied to Mesopotamia via Dilmun or from Meluhha (Heimpel 1987: 54). Judging from Oman's material evidence, it is rather salient that metals other than copper (and later iron) were rare and highly valued. Particular items, such as the famous animal pendants from the Wadi Suq sites of Qattarah (Cleuziou 1978-9: 44), Bidyah (al-Tikriti, personal communication), Shimal and Dhayah (on display in the Ras al-Khaimah National

⁸ In the wider framework of intercultural relations a Syrian component has been traced in particular for the Upper Gulf area (Potts 1986b). Mid third millennium BC textual evidence from Ebla refers to Dilmun in several respects including the association with metals (copper and tin). References continue well into the second millennium BC. Zarins (1986) has drawn our attention to the MAR-TU, a pastoral population that lived in the open steppe west of the Euphrates and that infiltrated and warred with southern Mesopotamia in the late third millennium BC. Onomastically it can be deduced that the MAR-TU were resident in Dilmun in the early second millennium BC and somehow involved in the Dilmun trade (*ibid.*: 246).

Museum), only pretend to be made of gold although they are more likely made of a gold/silver alloy or of gold-plated silver (J. Kunkel, conservator, personal communication).

Seals

Another group of artifacts displaying Harappan impact is that of seals. Seals in general are seldom known from Bronze Age excavations in the area. From Umm an-Nar comes only the above cylinder sealing of assumed Syrian origin. A yet unpublished cylinder seal with a very crude hut design was discovered in Umm an-Nar tomb B at Hili North (M. Mohsen, personal communication) in a general context of the last quarter of the third millennium BC. The settlement of Maysar-1 produced altogether four stamp seals: a heavily corroded lead seal with an indiscernible design from the surface (Weisgerber 1980: 85), an unpublished stamp seal again from the surface (found in 1988, G. Weisgerber, personal communication), a small pear-shaped carnelian seal, and lastly a prismatic stamp seal of steatite from house 4 (Weisgerber 1980: Abb. 15). From the Italo-French excavations in Ras al-Junayz three more stamp seals are known, two of them manufactured in copper (Cleuziou and Tosi 1987: fig. 18.1-2) and one in steatite (Cleuziou and Tosi 1986: fig. 23). And to conclude the list of Umm an-Nar related seals: a tiny circular copper stamp seal from Ghanadah with a single-dotted double-circle motif (al-Tikriti 1985: pl. 16a).

All seals listed here are from contexts dating somehow between 2400 and 2000 BC, with a clear weighting towards the last centuries of the third millennium. In itself the group is fairly inconsistent and heterogeneous, and the total number does not allow any conclusions on what one may call Omani Bronze Age glyptics. With that in mind, the elucidation of foreign imports or only of external traits is made rather hazardous. In particular, the two seals from Maysar and two others from Ras al-Junayz have led to a continuing discussion on Harappan influence in the area. The pear-shaped stamp seal from Maysar-1 bears the depiction of a stick-man or more likely an Indus script character (Weisgerber 1981: 218, Abb. 53). It was very convincingly matched with a solitary specimen from the Indus site of Harappa.

The prismatic seal (Weisgerber 1980: Abb. 15) from Maysar-1 possesses three facets engraved with zoomorphic motifs such as a caprid, dog, scorpion and zebu. It was mainly the zebu and the very presence of prismatic “sealing amulets” in the sphere of the Indus Valley culture which made Weisgerber draw the parallel without at any time questioning its indigenous Omani origin (for a detailed discussion *cf.* During Caspers 1983). The decoration of this seal is duplicated by a small square stamp seal from a Wadi Suq related burial in the Wadi Bahla (J. Orchard, personal communication).

Taking into consideration the stamp seals from Ras al-Junayz, two of these, a copper and a steatite one, are akin to each other in respect of their “engraving”—a simple lattice pattern. Cleuziou and Tosi have convincingly demonstrated the similarities both in seal type and in design with seals from the Indus valley (1986: fig. 21p), independently of

the geographically and chronologically widespread sealing pattern. As for the third (copper) seal, which is heavily corroded, they presented a radiograph (during the Indian Ocean in Antiquity Conference in London, 1988) depicting the contours of an animal facing an object, possibly a stand, which corresponds to a composition familiar in the Indus glyptics. In that particular instance an impact of Harappan art and iconography on the Oman peninsula cannot be disregarded.

From the early second millennium BC we only know of an imported Persian Gulf seal from Mazyad (Cleuziou 1981: fig. 8) and the aforementioned stamp seal from an early Wadi Suq burial in the Wadi Bahla (see above). A stamp seal from a warrior's tomb in Nizwa (Shanfari and Weisgerber 1989) obviously belongs to the late second millennium BC (late Wadi Suq or early Iron Age). Two heavily worn cylinder seals come from mixed contexts in the Wadi al-Qawr (on display in the Ras al-Khaimah National Museum).

Indus weights

In 1986 de Cardi published a short notice on Harappan finds in Ras al-Khaimah. As such she introduced a high-necked jar in a wheel-made red ware with groups of black painted horizontal bands (1986: 24). Parallels quoted from Lothal and from Rangpur periods A and IIA gave her an approximate date of the early second millennium BC which corresponded sufficiently with the chronological background of the Shimal-type tomb site 6 (now Sh 6) where the pot was found. The comparison has been repeatedly doubted and preferably replaced by parallels with Kaftari and eastern Arabian ceramics. But admittedly de Cardi's suggestion of a Harappan export was rather tempting since it was found in the same context as a cubic Indus weight. The stone of the weight is a polished banded chert. The sides are partly damaged and the weight was approximately 27 g. It is compatible with other Indus weights, for example from Susa (27 g.: Amiet 1986: ill. 93) or from Bahrain (one weighing 27 g. according to Bibby 1970: 350).⁹

It deserves special attention that Bibby (*ibid.*) noted, from levels 23 to 19 at Qala'at al-Bahrain, *i.e.* coinciding with late City I and early City II, altogether seven stone weights made of "steatite", a marble-like stone, limestone and banded chert. Among those are three cubic and four spherical ones. Spherical weight stones are said to be quite rare in the Indus valley. The Khatt-type collective burial Sh 99 at Shimal (see above: the early Wadi Suq tomb with the possibly imported knife and comb) yielded another banded and highly polished chert object of spheroid shape which in the light of the Bahrain discoveries I do not hesitate to call a weight.¹⁰ It distantly recalls weight stones for pearl merchants as they were still in use in the Gulf area until the 1950s (*e.g.* Kay 1986: 62).

⁹ The Indus cubic stone weight of polished banded chert has the following dimensions: 21.7 by 21.9 by 22.6 mm. The present absolute weight is 26.31 g. but note that it is damaged.

¹⁰ The spheroid weight from Shimal Sh 99 is made of polished banded chert. It has the following dimensions: minimum diameter 29.4 mm, maximum height 22.1 mm. The stone was found broken into two pieces which were later glued for display. The absolute weight after gluing was 25.71 g.

Of course, one may consider Indus weights as a curiosity among early second millennium BC grave finds, deprived of their original significance. But the wider context of Harappan finds on the Oman peninsula definitely does not justify such an assumption. That the Harappan weight system (and thus the implied standard) was in use in Makkan has attained even larger probability since Potts (n.d.) found two more cubic stone weights on his Umm an-Nar domestic site at Tell Abraq in Umm al-Qaiwain in early 1989.

Earthenware and pottery objects

Turning now to the ceramic artifacts, we face a very rich material testimony. No problems can be seen with the merely conceptual association of two clay figurines and a tetrahedron from late Umm an-Nar pottery workshop refuse outside tomb M at Hili (Cleuziou 1984: 392; fig. 41.29) with chess pieces or more generally gamesmen from the Harappa culture. Coming to pottery itself we have to distinguish between wares, decorative patterns and technical features, as well as graffiti and potters' marks. Previously the different criteria and categories had been dated in general or in detail with a strong emphasis on the early second millennium BC (Cleuziou 1981). With the newest results and a re-evaluation of the provenience and the context of particular finds and assemblages we cannot stick to this interpretation. We have reached now a better insight into the chronological and spatial distribution of that evidence.

String-cut bases, cord impressions and potters' marks

Within the pottery production there are two major technical criteria which have attracted our attention as Harappa-related or more broadly Indo-Iranian traits: string-cut bases and cord impressions. Both of them have been abundantly recorded in Oman from locally made wares mainly of the Wadi Suq period (Cleuziou 1981: 282). The technique of string cutting was introduced not later than Period IIf at Hili-8 (Méry, in Cleuziou and Tosi 1987) which is roughly contemporary with the Ur III period. The site of Asimah provides even earlier evidence. As for the string impressions, late Umm an-Nar domestic jars are repeatedly marked with them as in Maysar-1 where they were compared with Harappan counterparts (Weisgerber 1984: 198, fig. 24.4). The Wadi Suq occupation of the Shimal SX settlement (Franke-Vogt 1987: 2) and the roughly contemporary Period III at Hili-8 (Cleuziou 1989a: 25, with references to Shortugai and Gerdan Reg sites) indicate that this technique was very common in the early second millennium BC.

In the same connection Weisgerber (1984: fig. 24.5) introduced into the discussion the topic of potters' or—as he calls them—“household” marks, *i.e.* simple geometric designs like strokes, crosses, oblique lines *etc.* At Maysar they appear on locally made wares (usually domestic ware) engraved into the rim or the neck-shoulder zone. A few examples have been recorded in domestic ware at Hili (Cleuziou, n.d.: 5, fig. 8) and also at Umm an-Nar itself (Frifelt 1975a: fig. 13g). A similar way of marking vessels was recorded for instance from Mohenjo-Daro and Shortugai (Weisgerber 1984: 198) although Potts (1982) outlined a geographically wider distribution of such marks.

Indus shapes

Within the corpus of Omani Bronze Age ceramics are a number of pottery shapes that are clearly reminiscent of Harappan prototypes or parallels. These are for instance pedestalled bowls with a “fingernail”-imprinted bottom. Fragments at Maysar (Weisgerber 1984: fig. 24.3), Hili-8 (Cleuziou 1989b: fig. 8.3-4) and Shimal (unpublished) are usually made in a buff or orange sandy ware, *i.e.* a local ware, and are thus clear imitations of Harappan prototypes (*e.g.* from Shortugai). Cleuziou (*ibid.*: 7) was able to show their first appearance at Hili in Period IIf, *i.e.* during the last two centuries of the third millennium BC.

Two other pottery types are to be mentioned here: concave lids with a central knob which are manufactured in a local domestic ware exclusively at Umm an-Nar (Frifelt 1975a: 365, fig. 13a) copying possible Indus originals; and, secondly, fragments of strainers as they have been recorded from the Indus-related site of Ras al-Junayz (Méry, in Cleuziou and Tosi 1987: fig. 34.6).

Till now we have dealt with single or somewhat more than a handful of miscellaneous objects or potsherds. The testimony as such is, I feel, a minimum manifestation of what really happened in terms of import and exchange. It is only vaguely quantifiable and thus probably distorts the actual spectrum of exchanged commodities.

Indus micaceous ware and Indus-inspired funerary ware

It was in 1979 that Cleuziou (1981: 291), to give him the credit, was the first to suggest a foreign, *i.e.* Harappan origin for a ceramic ware which is now encountered basically all over the Oman peninsula. We are dealing here with the well-known “thick, reddish, well fired fabric with numerous micaceous inclusions. One side is red with traces of vanished black paint, the other bears a thick black/grey slip” (*ibid.*). This fabric has been reported up to now from Ghalilah (surface), Shimal (Franke-Vogt and Velde, in Vogt and Franke-Vogt 1987: 78), al-Qusais (W.Y. al-Tikriti, personal communication), Ghanadah (al-Tikriti 1985), Hili North tomb A (unpublished), Hili-8 (Cleuziou, *loc.cit.*), Wadi Ashwani 3 (Vogt, n.d.), Bat (Frifelt 1976), Wadi Samad (Weisgerber 1984), Ras al-Junayz (Cleuziou and Tosi 1986; 1987), more recently from Asimah (Vogt, n.d.), and from a considerable number of survey sites. In only apparent contradiction to what has just been said, it is merely potsherds we deal with, but like the indigenous Omani wares (such as the black on red fine wares which are here considered as local, within a wider Bronze Age tradition) they are evenly and consistently distributed through the region. That is surely not diagnostic enough *per se*, but there are exceptions to the rule both in respect of extremely high frequencies (*e.g.* Asimah) and in association with other “Harappanizing” artifacts (*e.g.* Ras al-Junayz). Furthermore, most of these potsherds originate in clear Umm an-Nar assemblages or, unless more accurately stated, in mixed Umm an-Nar/(early) Wadi Suq contexts. We have also learnt that except for one or two showings all finds were basically made in domestic inventories.

Although the distinction may appear rather crude we are dealing not only with a fabric but also with a ceramic ware: we recognize basically one associated type of vessel, a large-sized container. In the present state of knowledge, and for reasons certainly not without significance, only a fragment of one pedestalled bowl in the same fabric has been noted: from the Hili-8 settlement Period IIf, approximately 2200-2000 BC (Cleuziou 1989b).

One may, of course, question the postulated origin of this ware, but the occurrence of Indus script on such vessels (see below) leaves little doubt (even if petrographic and neutron activation analysis have not yet been finalized). Be that as it may, the respective potsherds belong to a highly standardized category of large-volumed vessels with a narrow base, a wide maximum diameter, a short (or no) neck, and a folded-over rim (Figure 2.1-2). We may describe

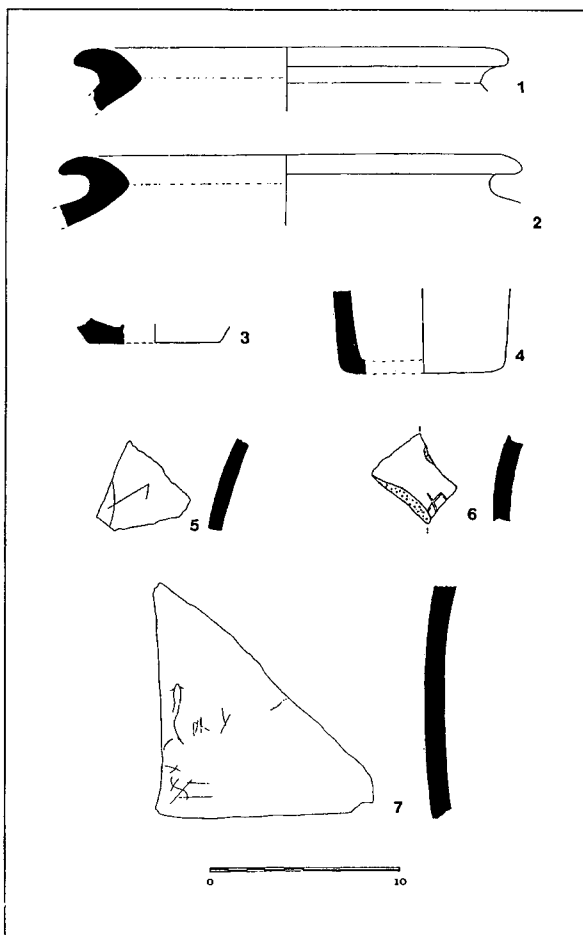


Figure 2 Imported Indus pottery from Asimah (all Indus micaceous ware); nos 5-7—bodysherds bearing graffiti.

them as storage jars, or containers used for storage or transport. The external and internal slip has been interpreted as an indication that the vessels were designed to be impermeable to water or the like (Méry, in Cleuziou and Tosi 1987). Once considered as typically Wadi Suq in context, they are now safely (and almost exclusively) anchored within the final phase of the Umm an-Nar pottery sequence. It is not only the very occurrence of the black-slipped micaceous Indus containers in an archaeological assemblage that is interesting, but also their association with other wares.

Ghanadah site 1 is an internally unstratified single period Umm an-Nar camp site. According to al-Tikriti (1985: 12f), pottery was found that mainly belonged to three major types—black on red fine ware, coarse ware (more common than the former), and “Mesopotamian ware”, represented only by a small number of rimsherds. The latter,

though slightly different from the related settlement finds from Umm an-Nar, and possibly a local imitation, are compared with pots from Mesopotamian Early Dynastic III sites. Not included in this classification is nonetheless the Harappan ware which is said to be “a large collection” (*ibid.*). Accepting the above parallels, we have to deal with quite an early showing of Harappan influence in the Oman Peninsula which is to be tested on the basis of other sites.

The percentage figures for Ras al-Junayz RJ2 are somewhat more informative. Méry (in Cleuziou and Tosi 1987) states that 57% of the total is a cream ware, a local domestic pottery which is well attested from the Wadi Samad and southern Omani sites. The black-coated micaceous Indus ware is represented by 14%. The remaining 29% are not specified, but are probably shared between the black on red fine ware and presumably a wider inconsistent spectrum of not yet defined Bronze Age ceramics. As for the local wares, typological and stylistic parallels have been drawn with finds from Omani sites dated absolutely in the last three centuries of the third millennium BC.

The Asimah domestic area is a site which was first presented at the Indian Ocean in Antiquity Conference held in London. The publication is in preparation, but since it is a very important site a few general remarks will be made here. Asimah is a mountain site at an ancient track linking Dibba with the Masafi area. To the west Asimah controls the access to a relatively small wadi which leads through the western piedmont zone of the northern Oman mountains and thus to the nearby carnelian sources. Minor showings of copper are known from the Asimah catchment, but copper processing was definitely not the major concern of the population of the time. The Bronze Age site (later occupations in the area have also been studied) can be divided into a domestic area (Ass, as 99), a so far unique “Alignment A”, and a small cemetery. Alignment A and the cemetery will be dealt with elsewhere. But it is to be noted that the cemetery, which is mainly of the third millennium BC, presents a number of tomb constructions never previously reported from the area, although architectural affinities with the well known Hafit beehives and Umm an-Nar tombs are salient (Vogt 1985b). At least one type, however, strongly recalls the tombs recently studied at Ras al-Junayz (Santini, in Cleuziou and Tosi 1987: figs 29, 32).

Equally unusual is the “domestic area”, which is a plainly euphemistic designation for a rather unsatisfactory finding. 22.5 trenches were opened, exposing an area of 450 m². Cultural deposits reached a maximum depth of 40-60 cm. An internal stratification proved impossible. Later intrusive finds (Wadi Suq and Iron Age potsherds) appeared in small clusters. Structures could not be traced at all (not even post-holes) but a coherent complex of installations such as pits, *tandoor* ovens, and simple stone-covered fireplaces. G. Weisgerber (personal communication) recognized a similar situation at Maysar-I in a stratigraphic context predating the major occupation. Also very similar is the “pre-architectural” occupation in the Shimal settlement which is possibly associated with

scraps of Umm an-Nar pottery. The Asimah domestic area served a non-funerary purpose: grinding stones, animal bones, a few flint tools, *etc.*, point to a domestic (or industrial?) function. Pottery was the major find category. Altogether more than 2,400 pre-Wadi Suq potsherds were collected, compared to only 534 sherds from Ras al-Junayz RJ2 (Méry, in Cleuziou and Tosi 1987). The Asimah pottery is frequently burnt, making the macroscopic distinction of fine wares rather problematic. The percentage distribution of the different wares is as follows:¹¹

15.8%	Umm an-Nar domestic ware
51.4%	Umm an-Nar black on red/buff and red fine ware (including two possible Emir grey ware sherds)
31.8%	Indus Valley pottery
1%	unidentified Bronze Age wares

Evaluating such figures raises several difficulties, especially with regard to a pottery reference sequence. The only comprehensive, conclusive and well dated sequence comes from Hili-8, although quite recently Cleuziou (1989b) claimed no general validity for the entire Oman peninsula. But still, the excavated sites of Bat, Maysar, Umm an-Nar, and Ras al-Junayz share major traits with Hili—sufficient for dating purposes. The quantity of ceramic finds from Hili-8 is equally meagre, leaving the whole chronological framework a matter of radiocarbon dates and the presence/absence of certain wares and/or ceramic types. Hili-8 period II, which is of the main interest to us, reflects different ceramic traditions which in their general tendency are most probably “compulsory” to a greater, yet to be defined catchment. Umm an-Nar red fine wares persist throughout period II although rapidly decreasing in number towards its end. The coming of the sandy buff or domestic ware is first noted for phase c2/d which is roughly contemporary with the Mesopotamian Early Dynastic III period. In phases f-g the domestic ware accounts for more than 95%, with the remaining percentage belonging to the black on red, the incised grey and the black on grey (*i.e.* Emir grey) fine wares.

Despite the lack of any internal stratification we consider the different wares at Asimah as basically contemporary. Their percentage proportion narrows the chronological options to a context parallel to Hili 8 period IIc2-e, roughly during the third quarter of the third millennium BC (*i.e.* Early Dynastic III/Early Akkad). This date is broadly corroborated by a wide variety of rim profiles and frequent decorations (such as appliqué meander ridges or painted spirals and hatched loops/leaves). Admittedly there are also a small number of rimsherds better known from phases f-g at Hili, *i.e.* the last quarter of the third millennium BC.

¹¹ Méry paid a short visit to the site and carried out a one-week study of the ceramics. The major classification is based on her efforts. The final counting was done by the author. Altogether 2,816 potsherds were collected, of which only 11.5% belong to periods later than the Iron Age and only 2.6% are distinctly second millennium BC. All the rest are most reliably attributed to the third millennium BC.

This is the context of the Indus ware for which an Early Dynastic III date is therefore proposed. Its association with other wares is also well documented for the same period from Ghanadah (see above), thus jointly providing the earliest evidence for any Harappan influence on the Oman peninsula. At Asimah the Indus ware is represented by all diagnostic characteristics—namely the micaceous paste, the dark or dark-red coating, the distinct rim sections and the graffiti.

At Asimah we have discovered at least three Indus ware body sherds bearing incised graffiti strongly recalling Indus script characters (Figure 2.5-7). Cursive writing is, of course, known from a number of Indus Valley assemblages, but the study of the Harappan script is mainly based on the better executed “calligraphy” as on stamp seals, copper tablets and the like. Thus, we can only remark that two of the Asimah graffiti are relatively deeply engraved (Figure 2: 5-6) but notwithstanding too fragmented to reconstruct the complete character. Some principal affinities with Koskeniemi and Parpola’s (1979: 19f) signs 75 and 244 (?) can be pointed out, whereas faint “scratches” on a third sherd from Asimah (Figure 2.7) evoke comparisons with the common fish sign (sign 51). A fourth graffito cannot necessarily be identified as a sign but rather as the kidney motif documented elsewhere.

It is not the first time that Harappan graffiti have been discovered on the Oman peninsula. Previously similar finds have been made at Ras al-Junayz, where fragments of at least two large containers bear Indus characters (Cleuziou and Tosi 1988) and even in the Indus Valley these pots are furnished with short inscriptions (Dales and Kenoyer 1987). For the time being the occurrence of Indus script on the Oman peninsula is too limited to dare any far-reaching interpretations, but at least it supports the identification of a particular earthenware fabric as Harappan. However, more interesting in the general scheme of Harappan influx into the area is the very high percentage of this particular pottery at Asimah. A share of 31.8% of imported pottery is really outstanding, especially in regard to its early date (Early Dynastic III). But the percentage calculation is based on all sherds found so far.¹² As a matter of fact this share will most probably represent a number of roughly ten individual vessels with a concentration of related rim pieces in two or three neighbouring excavation trenches. Their discovery in a domestic context in association with the numerous fireplaces and *tandoors* seems to advocate a specialized utilization and a material value which was not necessarily high.

Above we have used the term “containers” virtually without knowing their precise function. On the other hand one may easily note the absence of associated lids (in Indus

¹² A calculation on the basis of the minimum total of individual vessels (*i.e.* solely represented by solitary rim fragments) yields slightly different figures: the minimum total number of vessels of all wares is only 52. They can be classified as follows:

10 rims Indus Ware	=	19.2%
17 rims domestic ware	=	32.7%
25 rims black-on-red ware	=	48.1%

ware or even local imitations) or other vessels (*e.g.* bowls) which could have been used as such. Moreover, there is also no evidence for any sort of organic closure such as lumps with sealings or associated cord impressions. If we review the whole corpus of locally made pottery shapes we note at once the lack of large-sized vessels. In the Indus Valley culture the type of container is marked by a broad spectrum of combinations of the different attributes (rims, bases, form of belly, surface treatment, *etc.*) with varying capacities. But even the smaller ones are still considerably larger than the largest locally made vessels in all third millennium BC Omani assemblages. The few exceptional voluminous vessels are imported either from Mesopotamia (such as the amphorae from Umm an-Nar island: Frifelt 1975a: fig. 12a) or, as demonstrated above, from the Indus valley. One may feel that the techniques for manufacturing large vessels (coiling, composite built-up, *etc.*) were not mastered in Oman before the early second millennium BC. The Shimal settlement for instance yielded a large number of such Wadi Suq storage jars which very frequently show the cord impressions discussed above—a trait commonly associated with Indus and/or Indo-Iranian ceramic products. It may be a rather tempting idea to assume that the technical prerequisites (and hence the ability to shape large vessels) were adopted or copied from the Indo-Iranian borderlands.

Indus-inspired funerary wares

It has been noted already that Harappan pottery in Oman is known predominantly from the settlements. But there is also a fine ware variant which may fall into the wider context of Harappan ceramic traditions. Almost exclusively collected from Umm an-Nar tombs of the last 300 years of the third millennium BC, it is a sub-group of the better known painted black on red/buff fine ware. The most conclusive collection originates from tomb A at Hili North, but it is also known from other tombs in the Hili area, in Bat, Wadi Suq and in Shimal to mention a few. It can be distinguished from the former, macroscopically, by its temper of minute mineral grits and more obviously by its shapes and decoration. The shapes comprise mainly small bottle-necked vessels. Compared to the common Umm an-Nar black on red ware, the painted decoration of these pots is very rich indeed, including a wide variety of composite geometric designs (hatching, cross-hatching, “arcades”, trapezes, triangles, “fish scales”), floral motifs (hatched palm leaves, pipal leaves and creeping plants), and zoomorphic designs (goat, fish, peacock) (Cleuziou and Vogt 1983: fig. 7; Vogt 1985a: pls 25.1-7, 26.1.4; 1985b: Taf. 64-6). Stylistic comparisons have been discussed elsewhere in detail (Cleuziou and Vogt 1983: 262-7).

The above patterns could be very well matched *in toto* with the ceramic decorations of the Harappan culture and related assemblages, and although proper parallels for the shapes could not be quoted, we advocated direct contacts with the Harappan world rather than relations through the Indo-Iranian borderlands (*ibid.*: 266).

It is of course impossible to rule out, with certainty, the possibility that these vessels are local imitations, as was likely the case with the well known and abundantly painted

“Indus” jar from the Ras al-Junayz RJ2 settlement (Méry, in Cleuziou and Tosi 1987: fig. 35.1), but it does not diminish their significance as indirect evidence for close contact between the two areas.

Summary

The conclusion to be drawn from the above presentation of Harappan or Harappa-related manifestations on the Oman peninsula is that their existence itself cannot be doubted. It is broadly accepted that Oman itself was an important producer of commodities, evidence for which has for understandable reasons materialized quite substantially only in the find assemblages of the Upper Gulf and adjacent areas. The almost total absence of Omani goods in the Indus valley, however, does not permit the assumption that the latter was not a profitable market. Juxtaposing the scarcity of Harappan traits on Bahrain with a very strong Omani showing may say little about the intensity of Harappan interests in the Upper Gulf, although one is tempted to think of Oman as a temporary economic filter for Harappan maritime trade. That could have been true at least for a restricted period of time, when for instance abstract systems like the virtually Harappan “standard of Dilmun” had not yet been adopted. From such indirect/direct evidence one may also conclude that Oman’s interests in the Upper Gulf were unlike those towards the Indus valley, which could also apply to the goods trafficked in either direction. To some extent most of the products of Oman and the Greater Indus Valley were very much alike (and/or even complementary), but qualitative differences were evidently recognized by third parties.

On the other side Harappan commercial interests in Bahrain differed from those in Oman. Indus weight stones were probably not a trade item in the proper sense, and Indus motifs and characters in Dilmunite glyptics go beyond a mere decorative function: both imply some acquaintance with the immanent conceptions of Harappan culture. That is, of course, also valid for finds of similar nature in Oman, but there we have in addition at least three more categories of cultural traits widely encountered in the area: indirect evidence for perishable goods which were possibly contained in the ceramic receptacles described above; finished products (*e.g.* etched carnelian, an ivory comb, metal objects); and technologies (string cutting, cord impressions, shell-working technologies).

The trade between Oman and the Harappa culture was sea-borne and direct. Harappan outposts on the Makran coast narrowed the distance between the two areas, and there is hardly any reason to deny the presence of Harappans in Oman. The real nature of the relationship will remain uncertain as long as we do not know precisely what material evidence we have to expect? To quote two diametrically opposed examples from other areas and periods: Habuba Kabira was a Mesopotamian outpost in Syria with a classical Uruk IV inventory whereas Karum Kanish, an Old Assyrian trading colony in heartland Anatolia, demonstrated a maximum acculturation to the Anatolian material culture. The examples of Harappan outposts in Afghanistan (*e.g.* Shortugai) or along the

Makran coast (*e.g.* Sutkagen-Dor and Sotka-Koh) could as well suggest a pure Harappan finding somewhere in Oman; but since such evidence is getting more and more unlikely we may assume that the interregional commerce was rather in the hands of local trading houses. The common warehouse architecture of Harappan sites (as a possible manifestation of such establishments) looks different from that of two excavated in Oman—one on Umm an-Nar and one at Ras al-Junayz. Unlike in the Harappa culture the administrative evidence is meagre: from Umm an-Nar (from where no clear Harappan imports have been recorded) it was only one (Syrian) cylinder sealing. At Ras al-Junayz area RJ2, where most of the Harappa-related artifacts were found, four stamp seals of Indus type indicate some administrative activities of an extent and nature hardly comparable to that of the well known store-house of Harappan Lothal.

Returning to the Mesopotamian and certainly Mesopotamo-centric textual evidence (Heimpel 1987: 65), we instantly realize that save for silver Mesopotamia itself exported, to the Gulf and beyond, only perishable goods (agrarian products and textiles). In the early phase of international maritime trade Dilmun was only of minor importance. Her goods were mainly agrarian and finished products whereas the trade in raw materials became more important only with her later function as a middleman. Makkan on the other side was highly esteemed both as a producer of basic raw materials (copper, diorite) which were transshipped in large quantities and, to a lesser extent, for a restricted spectrum of rare indigenous raw materials. The same or similar commodities were also offered by Meluhha which, however, was more attractive as a major supplier of exotic raw materials (lapis lazuli, semi-precious stones, precious metals, tin, ivory, ebony, *etc.*) and finished or half-finished products. We are thus dealing with two consumer/producer subsystems of different interdependency within one larger system.

Sites like Asimah and Ghanadah indicate that Harappan impact on the Oman peninsula possibly started as early as the middle of the third millennium BC. It was quite strong from the beginning and witnessed a clear intensification towards the end of the millennium. With the formation of the Wadi Suq cultural assemblage in Oman at about 2000 BC (or slightly earlier), general conditions for contacts with the Greater Indus Valley deteriorated, and Harappan imports ceased rapidly and were subsequently replaced by products mediated by Barbar and Kassite Bahrain. It is quite possible that societal, demographic and economic changes were so drastic that Dilmun as an intermediary easily took over Makkan's role not as a producer but as a trader. The subsequent decline of the Harappan culture is also to be taken into further consideration. If these factors, *i.e.* a generally changing socio-economic situation in the entire Near East in the early second millennium BC, were really the responsible agents, the immanent causality still remains unknown. Kohl (1987) has convincingly demonstrated with the case of Central Asia how peripheral societies could affect Bronze Age world economic systems (and the reverse), but that was possibly also true for the entire Arabian peninsula which was in the process of major changes. More recent research in South-Western

Arabia has started to provide a better conception of a “pan-Arabian” pre- and protohistory. And that is what will eventually define the Arabian peninsula as a bridge between various core and peripheral economies.

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Meluhha

by GREGORY L. POSSEHL

During the Early Dynastic period a land known as Meluhha is first attested in the Mesopotamian historical record (Michalowski 1988: 164). Another early reference appears in a boast by Sargon of Akkad (2334-2279 BC) which has been translated by Kramer (1964: 49; Text 4 below, for the original see Hirsch 1963: 37f).

The ships from Meluhha,
the ships from Magan,
the ships from Dilmun
he made tie-up alongside
the quay of Akkad.

This paper begins with a survey of both textual and archaeological evidence for contact and interaction between Mesopotamia and Meluhha. This evidence, and important new chronological data, are then discussed in relation to the beginnings of urbanization in the Greater Indus Valley, since it is clear that the interaction between Mesopotamia and Meluhha may have had an important impact on culture processes in ancient India. Some consideration of what will be termed the Middle Asian Interaction Sphere concludes the presentation. In the last half of the third millennium the cultures of Middle Asia, the region between the Euphrates and the Indus and Central Asia and the Gulf, were participants in a new, unprecedented form of inter-regional economic interaction. The iconography of the so-called Intercultural Style (Kohl 1974) in this same region suggests that a broader set of cultural beliefs and values were a part of the new economic configuration. The scale and sociocultural dimensions of the Middle Asian Interaction Sphere indicate that this was an experiment on the creative edge of human experience.

Where were Dilmun, Magan and Meluhha located?

Dilmun, Magan and Meluhha were important places in the third and early second millennia BC and most archaeologists are now in general agreement on their locations (Figure 1).

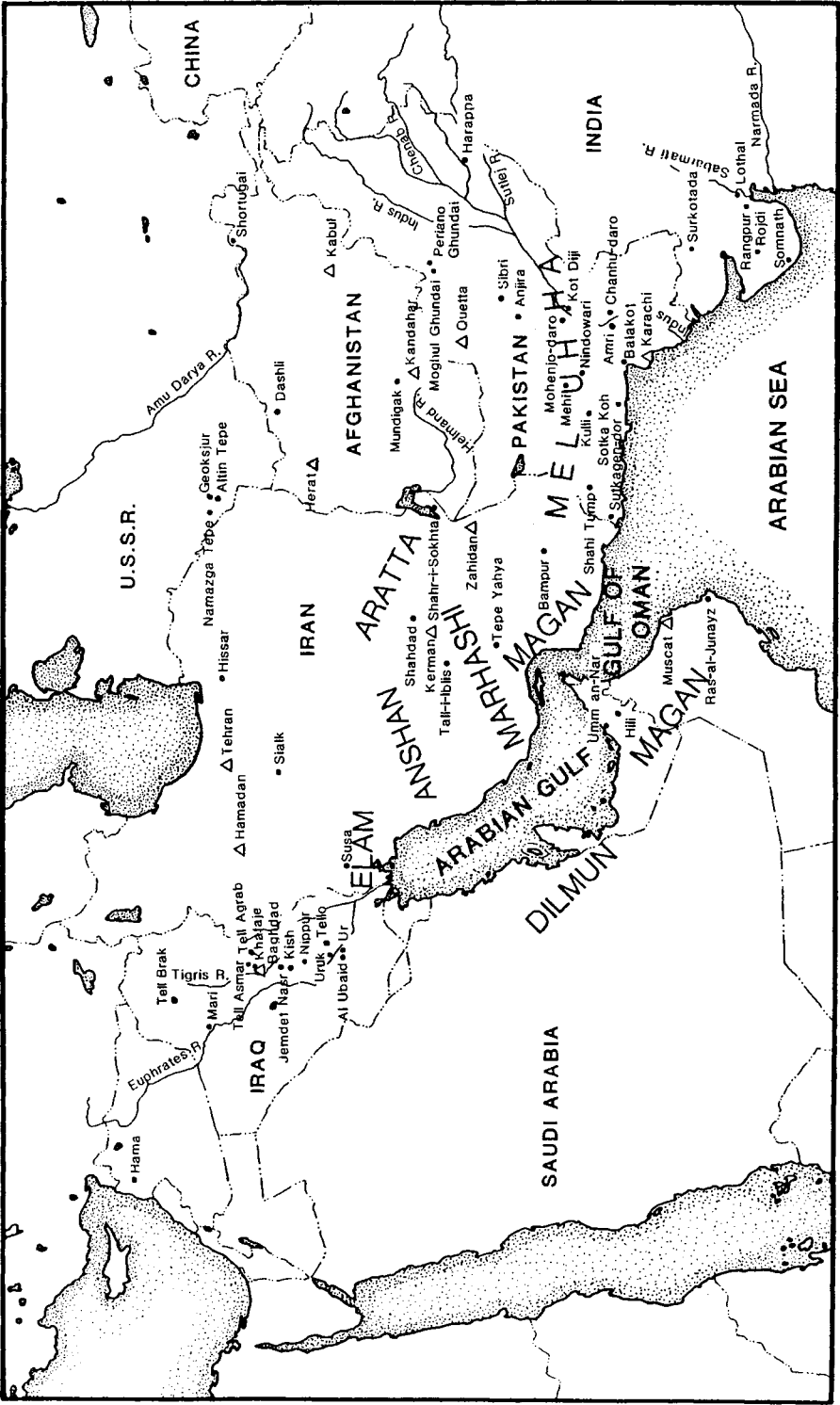


Figure 1 Principal sites in and between Mesopotamia and the Indus

The location of Dilmun

A very sound argument equating Dilmun with the island of Bahrain and the adjacent coast of Arabia was made by Cornwall (1944: 6-14 ; 1946). Some of his points may be summarized as follows:

1. Cuneiform texts refer to Dilmun as being in the midst of the Lower Sea. The Lower Sea is the modern Gulf, the Upper Sea being the Mediterranean. In the "midst of" strongly implies that Dilmun was an island.
2. The distance from Sumer to Dilmun is given as thirty *beru*, or double hours, a reasonable estimate for sailing time from the northern end of the Gulf to Bahrain.
3. There are archaeological remains on Bahrain that are in full conformity with the notion that it was the third millennium Dilmun.
4. There is a cuneiform inscription on Bahrain stating: "Palace (of) Rimun, servant of (the god) Inzak, man (of the tribe) of Agarum" (Meissner 1917). Other evidence indicates that Inzak was the name under which the Mesopotamian god Nabu was worshipped on Dilmun.
5. There is a general conformity between products available on Bahrain and those said to come from Dilmun.
6. "That part of the Eastern Arabian littoral was included in the kingdom of Dilmun is shown by inscriptions of Sargon of Assyria, wherein it is said that he brought under his sovereignty 'Bit-Iakin of the shore of the Bitter Sea as far as the border of Dilmun'. And that Bit-Iakin extended into Arabia - perhaps including much of what is now Kuwait - is the prevailing opinion of scholars" (Cornwall 1946: 5).
7. Finally, Sumerian records note the remarkable springs of Dilmun, something for which Bahrain is noteworthy.

The location of Magan

Discussion of Magan's location has generally allowed that it was to the east of Dilmun. This is based on the consistency of the ordering of place names in cuneiform texts; either Dilmun, Magan, Meluhha or the reverse. This strongly suggests the actual geographic ordering of the places. Thus, southeastern Iran and/or the Oman region of Arabia have long been the logical candidates for its location (Kmosko 1917). Contemporary scholarship has not resolved this issue; however, the following seems to be clear. First, Magan is known as the home of copper in many texts (*e.g.* the *Lipšur* litanies, Text 53 below) and Oman has recently produced abundant evidence for third millennium copper mining and smelting (Weisgerber 1978; 1980a, b; 1981; 1983a, b). Actually as early as 1928 Harold Peake used metallurgical analysis to suggest the same. He noted that much Sumerian copper has traces of nickel, an element present in Omani copper but absent in ores from the Sinai, Cyprus, Anatolia and Iran. Peake (1928: 454-7) went so far as to say

that Oman was known to the Mesopotamians as Magan. Second, the statues of Naram-Sin and Gudea all mention that the stone used in carving them came from Magan. Wolfgang Heimpel (1982) obtained five samples (four from Old Akkadian objects and one from a Gudea statue) of the dark, dense stone in question and had them subjected to petrographic analysis. This analysis demonstrates that the Old Akkadian stone is an olivine-gabbro and that the Gudea specimen is “equigranular quartz diorite”. Olivine-gabbro is available in Oman and this is consistent with Akkadian textual references and the inference that this area was ancient Magan. But Heimpel documents the fact that the true diorite from which the Gudea statue was carved could not come from Oman: “While diorite occurs in Oman it does not occur in blocks large enough for the manufacture of statues.” He suggests that we look to occurrences of diorite and gabbros some fifty miles to the north-north-east of Bandar Abbas.

Thus, there is good reason for us to assume that Magan was, in the minds of the Mesopotamians, a land beyond Dilmun which was located on both sides of the Straits of Hormuz. It may have included the area now known as Makran, although the author has a serious reservation about the etymological relationship between “Magan” and “Makran” (Hansman 1973). This notion is fully in keeping with Daniel Potts’ recent work on inscribed alabaster vessels (1986).

The location of Meluhha

The location of Meluhha has proved to be more difficult to determine. This topic has been discussed in many places and the following are citations for only a few: Meissner 1920: I, 345f; Landsberger 1924: 217, n. 2; Cornwall 1944; 1946; Weidner 1952: 6f; Kramer 1956: 90; 1964; Bibby 1958a: 55; Leemans 1960a: 159-66; 1960b; 1968; Gelb 1970: 5; Thapar 1975; Possehl 1979: 153f; Ratnagar 1981; Piesinger 1983; additional older bibliography is cited by Weidner. R. Thapar’s proposals concerning the location of Dilmun, Magan and Meluhha drew at least two full commentaries (Chakrabarti 1975a; During Caspers and Govindakutty 1978). Most modern scholars assume it to have been the area we associate with the Harappan civilization, now including the so-called Kulli culture of mountainous southern Baluchistan (Possehl 1986). The basis for this judgment seems to rest primarily on five historical observations and one implication:

1. Meluhha was a real, not a mythological, place. This is borne out by the presence of an Akkadian seal attributed to a translator of the Meluhhan language (Text 2 below) as well as the fact that Meluhha occurs in lexical texts associated with other real places.
2. If the ordering of the place names (Dilmun, Magan, Meluhha and the reverse) has historical value it would seem to indicate that Meluhha is somewhere to the east beyond Magan/Oman. The lands of the Indus civilization are therefore a logical place to be associated with Meluhha.

3. There is Harappan material in Mesopotamia, some with the Indus script, and some Mesopotamian material in Harappan sites. We know therefore that these two regions, separated by *ca.* 1,500 miles, were in contact with one another in the third millennium BC. This is fully congruent with the proposed identification.
4. The presence of Harappan material at Ras al-Junayz in Oman, and in the Gulf, within a fully maritime environment, supports the notion that the Harappan civilization was in maritime contact with Mesopotamia, as suggested by the written sources.
5. The products mentioned in the texts that are said to come from Meluhha do not contradict an association with ancient India.
6. These five observations lead to an implication. If Meluhha was not associated with the Harappan civilization, including the Kulli complex, then the Indus was apparently not mentioned in cuneiform documents. This would present an awkward historical situation given the presence of more than trivial amounts of Harappan material culture in both Mesopotamia and the Gulf.

Kullis, Baluchistan and Meluhha

Most contemporary views of the Harappan civilization now include the Kulli sites of Waziristan, or southern Baluchistan, as a highland aspect of this urban system (Piggott 1950: 98-120; Possehl 1986: 58-61). While there is much to be done with the Kulli material there are sufficient data for this to be held as a sound working hypothesis. Radiocarbon dates from the sites of Niai Buthi and Nindowari, in addition to comparative study, demonstrate that the Kullis and Harappan were contemporaneous (*ca.* 2500-2000 BC; Possehl 1986: 51-61). The best evidence for Kulli urbanization comes from the site of Nindowari (Casal 1966; 1968) which measures *ca.* 1,000 by 500 m.—essentially the size of the lower town at Mohenjo-daro. The presence of a massive, tiered platform at the site documents public, monumental architecture. Harappan stamp seals and the stylistic similarities in ceramic vessel forms argue favourably for a close cultural relationship between the highlands and the plains (Possehl 1986: 17).

The Kulli assemblage of material culture, principally the ceramics and terracotta figurines, is distinctive, at least if viewed holistically. This allowed Walter Fairervis and the author to identify eighty-four sites with Kulli ceramics in the collections of the Department of Archaeology in Karachi (Possehl 1986: 147-51).

There are at least two more purely Harappan sites in this region as well, Sutkagen-dor and Sotka-koh, both of which are coastal (Dales 1962a, b). This is not the place to document notions of cultural affiliation as they might be gleaned from a study of material culture. Suffice it to say that an examination of original collections documents the fact that Sutkagen-dor and Sotka-koh are very much more like the Mature Sindhi Harappan as found at places like Mohenjo-daro or Chanhudaro than they are like the sites of Kulli

or Mehi. Thus, there is evidence for cultural diversity, within the overarching Harappan paradigm, in southern Baluchistan at this time. It also documents the presence of “peoples of the plains” in the mountainous western borderlands of the Harappan domain. This is significant since, as will be seen, there are a number of Mesopotamian textual references to the “mountains of Meluhha,” and not one to the “plains of Meluhha.” Therefore, if the texts are interpreted narrowly, Meluhha would have to be limited to the region of southern Pakistani Baluchistan. Archaeology suggests other things, with good examples of Sindh Harappan artifacts in Mesopotamia and some western material culture in Harappan contexts in the Greater Indus Valley. If one had to search for a possible place at which Meluhha might have begun with an approach from the west, Sutkagen-dor in the Dasht valley would be as good a place as any to suggest.

The investigation of ancient Meluhha

There is both a fascination and an importance to the investigation of the so-called “Dilmun trade”, an overarching term used to describe this interaction within the Gulf and the Arabian Sea. It gives scholars a rare and early insight into important interregional economic and social processes. The Dilmun trade is also a splendid forum within which a productive interaction between archaeology and history can be played out, especially given the recent advances which field archaeology has made in this world region.

For those interested in the earliest history of India and the Indus civilization, the Mesopotamian references to Meluhha and Meluhhans might one day offer important insights into the Harappans, their way of life and institutions. The possibility of bilingual texts in Sumerian or Akkadian and Harappan is, in my view, more likely to emerge in Mesopotamia or the Gulf, than in the Greater Indus Valley. This opinion is based on the rich qualities of the Mesopotamian written tradition in terms of volume, variety and scope. There is also documentation in Old Akkadian times for at least one translator of the Meluhhan language (see below). Even failing the appearance of true bilingual texts there may be room for an investigation of various etymological issues between Mesopotamian languages and Harappan, at least in principle.

Historical sources on Meluhha

References to Meluhha are found in texts dealing with the Mesopotamian economy, foreign trade, especially maritime trade, as well as royal inscriptions of the type already cited. Literary and lexical mentions of this foreign land also occur. Some years ago Michael Nimtz of the University of Pennsylvania prepared a list of primary cuneiform sources on Dilmun, Magan and Meluhha. Many of the references to Meluhha given below have been taken from this document (Nimtz, n.d.). There is also a recent compilation by Heimpel (1987). The following is as complete a corpus of references as I have been able to assemble:



Figure 2 Cylinder seal of an interpreter of the Meluhhan language (de Clercq 1888: pl. 9.83)

Early Dynastic references to Meluhha

1. "May Magan and Meluhha submit to you!" The text is probably a school copy of an original composition that may have been addressed to a king or deity. It has parallels to the statues and cylinders of Gudea (Michalowski 1988).

Old Akkadian references to Meluhha

2. Cylinder seal of a translator of the Meluhhan language (de Clercq 1888: pl. 9.83), Figure 2.
3. List of names from Lagash with Meluhha as a personal name. Text not published; probably Old Akkadian (Thureau-Dangin 1910: no. 1426; Parpola, Parpola and Brunswig 1977: 144f).

Later references to possible Old Akkadian Meluhha

4. Inscription of the kings of Akkad where Sargon claims boats of Dilmun, Magan and Meluhha tied up at the quay of Akkad (Kramer 1964: 49; Hirsch 1963: 37f).
5. Inscription of the kings of Akkad with a restored reference to ships of Dilmun, Magan and Meluhha (*ibid.*: 49).
6. In the *Legend of Naram-Sin*, Sargon of Akkad claims to have conquered Dilmun, Magan and Meluhha (*ibid.*).
7. From the *Curse of Agade*: "Meluhhans, people of the black mountains, brought exotic wares down to her..." (Cooper 1983: 53.48f).
8. The geography of Sargon of Akkad: "... the bridge of Baza on the edge of the road to the land of Meluhha" (Grayson 1974-7: 59f).

Gudea inscriptions

9. Import of wood from Meluhha. Gudea Statue B, column 6.26f (Steible 1991: 166f).
10. Gold dust imported from Meluhha. Gudea Statue B, column 6.38-40 (*ibid.*: 166-9).
11. Gudea imported wood from Meluhha. Gudea Statue D, column 4.8 (*ibid.*: 188f).
12. Gudea Cylinder A, column 9.11-19 (Jacobsen 1987: 399f):
Thrust against heaven
is its dread halo,
and over all lands hovers
great awe of my house;
at (the mention of) its name
all lands will gather
e'en from heaven's borders;
Magan and Meluhha
will come down from their mountains.
13. Gudea Cylinder A, column 15.8-10 (*ibid.*: 406):
The Elamite came to him from Elam,
the Susian came to him from Susa,
Magan and Meluhha in their mountains
loaded wood upon their shoulders for him
and gathered, to build Ningirsu's house,
to Gudea to his city of Girsu.
14. Gudea Cylinder A, column 26.19-22 (*ibid.*: 408):
To the ruler, as the man in charge of building
his master's house,
gold was brought
in dust from its mountains;
to Gudea they were bringing down
refined silver from its mountains,
carnelian they were lavishing on him,
from Meluhha, and from the alabaster mountains
they were bringing alabaster down to him.
15. Gudea Cylinder B, column 14.13 (*ibid.*: 437):
Beside copper, tin, slabs of lapis lazuli,
refined silver and pure Meluhhan carnelian,
he set up a huge copper pail,
a huge double bowl of copper,
a pure copper goblet
and a pure copper jar,
An worthy,
at the place of regular offerings,
so that the thunderbird of the sky,
could carry a pure table up to An.

Reference to copper, tin and lapis lazuli in this inscription is not likely to link them to Meluhha (Behrens, personal communication).

16. lú-me-luḥ-ḥa. Reference to a man with Meluhha as a personal name (Sollberger 1972: 50.76.6).
17. (lugal) an-ša-an^{ki} ù^{uru}me-luḥ-ḥa^{ki}. The British Museum has a fragment of a Neo-Babylonian copy of a Manishtushu inscription related to the Cruciform Monument (Pinches 1963: 3). This has been published by Sollberger (1968: 55, 63, 67):

When all the countries became hostile to me, I set up my men
in two (wings): I subdued Anšan and the city of Meluhḥa; the
king of Anšan and the city of Meluhḥa, in a silver neck-stock
I brought into the presence of Šamaš.

Sollberger's comment on this passage is as follows: "The substitution in (the British Museum version) of 'the city of Meluhḥa' for Širīḥum... is remarkable but the connection of Meluhḥa with Anšan, far from solving the vexing question of its identification and location, makes it, if anything, still more complicated."

18. lú-KU-má-me-luḥ-ḥa-ka. This is a reference to a man involved with a ship of Meluhhan type (Hackman 1958: 298.8).

Ur III economic texts with references to Meluhha

19. Two-thirds *mana* 5 shekels of tin, 6 *mana* of Meluhha copper, 6 shekels of old(?) copper objects, the bronze being... (Legrain 1947: 215.368).
20. ...Sheaths made of giš-ab-ba-me-luḥ-ḥa. Giš-ab-ba is a thorn tree, apparently associated with Meluhha (*ibid.*: 217.430). See the *Chicago Assyrian Dictionary*, vol. K, 1971: 597: giš-ab-ba is a loan word from Akkadian *kusabku*.
21. One weapon made of giš-ab-ba-me-luḥ-ḥa to be gold-plated (*ibid.*: 224.660).
22. One seat made of giš-ab-ba-me-luḥ-ḥa, gold-plated (*ibid.*: 225.703).
23. ...weapon(?) with sheath(?) made of giš-ab-ba-me-luḥ-ḥa (*ibid.*: 228.752).
24. Three *mana* of ivory, cut, out of which 1 small male figure, 3 small female figures, 1 dar-mušen-me-luḥ-ḥa, a bird (*ibid.*: 228.757).
25. Ivory cut to make 3 dar-me-luḥ-ḥa, a bird (*ibid.*: 228.761).
26. Ivory cut to make 1 dar-me-luḥ-ḥa (*ibid.*: 229.764).
27. Ivory cut to make 1 dar-me-luḥ-ḥa, 1 sheath... (*ibid.*: 229.768).
28. Ivory cut to make figures of a man and a woman, 1 dar-me-luḥ-ḥa (*ibid.*: 229.770).
29. One piece of a high seat made (?) of mēs-me-luḥ-ḥa. Mēs-me-luḥ-ḥa is apparently a wood associated with Meluhha (*ibid.*: 231.818).
30. giš-ab-ba-me-luḥ-ḥa (*ibid.*: 232.828).
31. One broken (?) top of a bed of Meluhha *mēsu sā-a-bi-tum* is cut, out of which is made a stool (*ibid.*: 248.1241).

32. ...out of a spare part of Meluhha *mêsu* wood, 1 sheath...is made... (*ibid.*: 259.1498).
33. One piece of a 'joined' stool (*kašâru*) of Meluhha *mêsu sá-a-ba-tum* wood from the god's gift shop... (*ibid.*: 260.1498).
34. ...1 broken (?) top of a bed of Meluhha *mêsu sá-a-ba-tum* is cut... (*ibid.*: 260.1498).
35. Six persons working in the service of an overseer with the name Meluhha (Delaporte 1912: no. 8015; Parpola *et al.* 1977: 144). Text not published, probably Ur III.
36. A ration of grain received by Urkal, son of Me-luḥ-ḥa (Nies 1920: 56f.64.12).
37. 22.4 *gur* (of grain) from (the village) of Meluhha (Barton 1914: no. 368; Parpola *et al.* 1977: 141).
38. me-luḥ-ḥa. 180 *silá* of grain come from a man with the name Meluhha (Lutz 1927: 192.65.6; Parpola *et al.* 1977: 143f).
39. ì-dub-me-luḥ-ḥa: ...from the storehouse of a man with the personal name Meluhha (Pinches 1908: 54.14; Parpola *et al.* 1977: 140).
40. ì-dub-me-luḥ-ḥa. Delivery of grain done by a man from Meluhha (de Genouillac 1910: no. 705; Parpola *et al.* 1977: 143). Only a translation of this text has been published. The original cuneiform is not available. There is a possibility that this reference is to a man with the name Meluhha, not a man from Meluhha.
41. Giš-kiri₆ me-luḥ-ḥa ⁴nin-mar-ki-ka: text from Tello referring to "the Meluhha garden of Ninmar" (Chiera 1921: no. 19; Parpola *et al.* 1977: 138).
42. má-gur₈-re IM-e tag₄-a dumu-me-luḥ-ḥa: this is a list of rations dealt with in the context of a ship and a man called "son of Meluhha" (Reisner 1901: no. 154, column 6; Parpola *et al.* 1977: 142f).
43. ur-^dlama dumu-me-luḥ-ḥa: reference to ur-^dlama "son of Meluhha" (King 1898a: 11.14594; Parpola *et al.* 1977: 142).
44. ur-^dlama dumu-me-luḥ-ḥa: reference to ur-^dlama "son of Meluhha" (Lau 1906: no. 242, column 2.10f; Parpola *et al.* 1977: 134).
45. Nin-ana from the Meluhha village (Delaporte 1912: no. 7157; Parpola *et al.* 1977: 134).
46. Reference to the granary of the village of Meluhha (King 1898b: no. 17751; Parpola *et al.* 1977: 136).

Old Babylonian literary references to Meluhha

47. *Enki and the World Order* (Benito 1969: 120):
 120. I will look upon...
 121. [...] he has given to me and he will make me eat [fish].
 122. [...] in the pure place(?) [...]
 123. [...] - I will look upon its green [cedars?].
 124. [...] Magan and Dilmun,

125. I am Enki, may he look upon me.
 126. Cause the trees to be cut down for(?) Dilmun-boats,
 127. Cause the Magan-boat to reach(?) the horizon(?).
 128. The 'magilum'-boat of Meluhha
 129. May transport gold and silver,
 130. May bring them to Nippur for Enlil, the [king] of all the lands.
48. *Enki and the World Order* (*ibid.*: 125):
219. Then he proceeded to the land of Meluhha,
 220. Enki, the king of *apsu*, decreed his fate:
 221. "Black land, may your tree be a big tree, may [your] forest be of highland 'mes'-trees..."
49. *Enki and Ninhursag*, Ur version (Jacobsen 1987: 189):
- May the land of Tukriš
[offer you for exchange] gold of the river bed,
may it exchange lapis lazuli
and clear [lapis lazuli!]
May the land of Meluhha
load precious desirable sard,
mêsu wood of the plains,
the best *abba* wood up into large ships!
50. A multi-coloured or reddish dog of Meluhha was received as tribute for Ibbi-Sin. A copy of it was made and taken to the temple as a votive gift to Nanna. The name of the dog translates "He bites!" This is an Old Babylonian copy of an Ur III inscription (H. Behrens, personal communication; Sollberger 1965: 37.9-13).
51. From an incantation (Cohen 1975: 31.136-41):
- On that day from the gold of Harali you are "Ennatum".
From the carnelian and lapis lazuli of the land of Meluhha you are "Ennatum".
From the topaz of the land of Marhasi you are "Ennakam".
52. A tablet from Nippur (Lambert 1960: 272f):
- The donkey of Anshan, the... of Parahse,
the cat of Meluhha, the elephant of the steppe,
(are the creatures) which bite off a willow(?)
as though it were a leek.
53. From the *Lipšur* litanies (Reiner 1956: 133.33f):
- May Meluhha absolve, the home of carnelian,
may Magan absolve, the home of copper.
54. From a year formula for king Irdanene of Uruk comes the mention of pearls from Meluhha: *na₄-igi-me-luḥ-ḫa* (Falkenstein 1963: 10).

Old Babylonian and later lexical and other references

55. Me-luḥ-ḫa-ki (Reiner 1974: 14). Old Babylonian.
56. Me-luḥ-ḫa-ki (Landsberger and Reiner 1970: 58). Old Babylonian.
57. [Kur-me]-luḥ-ḫa (Reiner 1974: 24). Old Babylonian.
58. Giš-banšur-me-luḥ-ḫa: a wooden table of Meluhha (Landsberger 1957: 168). Post-Old Babylonian.
59. Giš-gu-za-me-luḥ-ḫa: a wooden chair of Meluhha (*ibid.*: 158). Post-Old Babylonian.
60. Giš-má-me-luḥ-ḫa: a wooden ship of Meluhha (*ibid.*: 174). Post-Old Babylonian.
61. Urud-me-luḥ-ḫa is copper from Meluhha (Landsberger 1959: 142).
62. Dar-me-luḥ-ḫa-mušen: a bird of Meluhha (Landsberger 1962: 147).
63. [D]ar-me-luḥ-ḫa-mušen (*ibid.*: 168).
64. Dar-me-luḥ-ḫa-mušen (*ibid.*: 176).
65. Giš-a-ab-ba-me-luḥ-ḫa (variation on giš-Ú.GÍR-a-ab-ba-me-luḥ-ḫa): a tree or wood of Meluhha (Landsberger 1957: 105).
66. Giš-ab(ba)-me-luḥ-ḫa (variation on -ba-ab-). Giš-ab-ba is a thorn tree apparently associated with Meluhha (Green, n.d.).
67. Giš-ab-ba-me-luḥ-ḫa: a school tablet mentioning a tree or wood of Meluhha (Dossin 1927: 54.1).
68. Giš-gišimmar-me-luḥ-ḫa: a tree or wood of Meluhha (Landsberger 1957: 117; see the Greek transliteration of this inscription in Sollberger 1962: p1. 25.A4).
69. [u₄-hi]-in-me-luḥ-ḫa are fresh dates associated with Meluhha (Reiner 1974: 165).
70. Giš-mes-me-luḥ-ḫa: a tree or wood of Meluhha (Landsberger 1957: 109).
71. Giš-mes-me-luḥ-ḫa (variation on -luḥ-ḫa-na, [-]luḥ): (Green, n.d.).
72. [Na₄-g]ug-me-luḥ-ḫa: carnelian associated with Meluhha (Landsberger and Reiner 1970: 8).
73. Na₄-gug-me-luḥ-ḫa (*ibid.*: 41).
74. Na₄-gug-me-luḥ-ḫa-[ha]: carnelian associated with Meluhha (*ibid.*: 51). Late Old Babylonian.
75. Na-gug-me-luḥ-ḫa (*ibid.*: 56).
76. Reference to an unidentified stone from Meluhha (Figulla and Martin 1953: no. 549.1). Old Babylonian.

Some observations on the documentary evidence

Evidence for a true, historical Meluhha is best seen in three of the sources given above. The first of these is the cylinder seal attributed to a translator of the Meluhhan language. This is a powerful and convincing piece of evidence, and increases the chance for bilingual Sumerian or Akkadian and Harappan documents. Second, the occurrence of

“Meluhḫa” in the lexical series and geographical lists with other “real” places suggests a genuine historical context for the place. It is also important to note that Meluhha in these lists is given as either “Meluhḫa-ki” which denotes Meluhha as a definite geographical place or “kur-Meluhḫa”, which might equal “the land of Meluhha”. These two forms are different from an unaffixed “Meluhḫa”, which would be a much more vague appellation (Herman Behrens, personal communication). There is also the Akkadian form *meluhḫu* which means “in the style of Meluhha” (*Chicago Assyrian Dictionary*, vol. M, 1977: 15). This seems to occur with some frequency and is not yet well documented.

It is clear that the context within which the four variations on the term “Meluhha” occur is important and will play a central role in any interpretation of the place that would pretend to be holistic. The fact that there is no catalogue and distillation of this more purely Assyriological side of the problem suggests that there is significant, relatively straightforward work for the future.

The seventeen references to Meluhha in *Ur Excavation Texts* 3 (Legrain 1947) all seem to be within the “workshops” of Ur. They deal not with foreign commerce but with the manipulation of products associated with Meluhha or the manufacture of things that are said to be of Meluhhan origin; models of birds, for example. These texts do not document the import of either the ivory or the birds.

In the end the cuneiform record for Mesopotamian records relating to Meluhha is not especially impressive. A summary of the number of attestations from the seventy-six citations noted above looks like the following:

<i>Stone and pearls:</i>	Carnelian: 8 attestations.
	Lapis lazuli: 1, but in an incantation.
	Pearls: 1
<i>Wood and plants:</i>	Giš-ab-ba-me-luḫ-ḫa: 12
	Mêsu wood: 7
	Fresh dates: 1
<i>Animals:</i>	A bird: 8, but 5 as figurines.
	A dog of Meluhha: 1
	A cat of Meluhha: 1
<i>Metal:</i>	Copper: 2
	Gold: 1
<i>Meluhhan style objects:</i>	Ships of Meluhhan style: 2
	Meluhhan style furniture: 3
	Figurines of Meluhhan birds: 5 (see <i>Animals</i> above).

Four points are immediately evident from this review:

1. Ivory is not mentioned as a part of the trade with Meluhha, although it is mentioned in connection with Dilmun.
2. It is also worth repeating that none of the texts mention any Mesopotamian products being sent directly to Meluhha; when going through this exercise it

is also wise to keep in mind that some exports may be “invisible” (Crawford 1973).

3. Many of the texts mentioning Meluhhan products occur in a literary context and are therefore difficult to evaluate critically.
4. Finally, the number of attestations is small and the references diverse, hardly the kind of robust data on which sound historical argument can be founded.

The need for an Assyriological study of Dilmun, Magan and Meluhha

All of this suggests that the time is right for a thorough study to be undertaken by someone with the Assyriological training and skills necessary for a critical evaluation of the primary sources, the texts that bear not only on the identification of Meluhha, but of Dilmun and Magan as well. Other remote foreign lands (*e.g.* Tukrish, and Marhashi) might also be included in such a review. Until this Assyriological study is completed the historical context within which Dilmun, Magan and Meluhha existed will elude us, and there is very little hope for significant progress in understanding the important conjunction of economic and political forces that lie at the foundations of their relationship and shape the history around them.

The textual references to the products of Magan and Dilmun

There are also many textual references to Magan and Dilmun, some of which appeared above. The Nimtz catalogue lists approximately 170 citations, but my Assyriological colleagues at The University Museum assure me that there are more. As noted above, the absence of a systematic, descriptive catalogue of these ancient places is a serious deficiency, especially in light of the amount of archaeological work now being undertaken in the Gulf and southern Asia. It is impossible to deal effectively with Mesopotamia/Meluhha relations without reference to these intervening “lands” since all four places (Mesopotamia, Dilmun, Magan and Meluhha) were part of a system of trade and international relations. Meluhha’s relationship with Mesopotamia can only be understood with due appreciation of the roles of Magan and Dilmun.

The Land of Magan

Ratnagar (1981: 39f) notes seven ancient textual references to the boats of Magan. She also lists, with ancient textual citations, fifteen products associated with Magan: copper, timber, giš-ḥa-lu-ub or *ḥaluppu* wood, giš-mes-makan or *mêsu* wood of Magan, giš-gišimmar (another wood), wood products, a Magan reed, the Magan onion, diorite or olivine gabbro (see above), stone vases (some of which are alabaster), carnelian and other semi-precious stones, red ochre, ivory, gold dust, goats.

It has already been argued that Magan is now the area we associate with Oman and coastal southeastern Iran, possibly including the region of modern Makran. With this in mind it appears that Magan was both a place for the origin of products, especially copper,

and an entrepot, passing along products from Meluhha on to Dilmun and/or Mesopotamia. The carnelian and ivory are products which most strikingly suggest this. The gold dust, also mentioned as a product of Meluhha (see Text 10 above; Gudea Statue B), might be in the same category. India had a reputation for producing gold dust, if Classical writers bear accurate testimony (Herodotus III.98-102). The Indians' supposed use of the digging and nesting habits of ants in their pursuit of gold dust is unique.

The Land of Dilmun

More is known of Dilmun than either Magan or Meluhha, and the compilation of a systematic catalogue of textual references to it would be a task of sizable proportions. Since that is not the task set for this presentation, reliance on Ratnagar's book will be necessary. She notes (1981: 23) that we have references to the following products coming to Ur from Dilmun: copper, silver, gold, carnelian, other semi-precious stones, lapis lazuli, ivory and ivory objects, "fish eyes" or pearls, white coral, various woods, dates.

Dilmun has even more the flavour of an entrepot than does Magan. The first seven items, plus the dates, on Ratnagar's list are all attested from either Meluhha and/or Magan and would not be found as a part of the Dilmun landscape. The pearls, coral, woods and dates are, however, things that could have come to Mesopotamia from a number of places, one of which would be Bahrain island and the adjacent Arabian coast.

In the ancient texts there is talk of Dilmun merchants and, as noted, many references to this place as a commercial centre. One gets a sense that Dilmun was the operational "nerve-centre" for this early Gulf and Arabian Sea trade. It seems that it was the Dilmun merchants who generally dealt directly with their Mesopotamian colleagues on the one hand and their Magan and Meluhhan counterparts on the other. While there is evidence for direct contact between Mesopotamia and the latter two lands, this does not contradict the fact that Dilmun emerges as the centre with the greatest control over the trade, at least as a working hypothesis. It is principally for this reason that it seems impossible for one to understand the Mesopotamian/Meluhhan relationship without reference to Dilmun.

The archaeological record and Indus/Mesopotamian contacts

The textual record in Mesopotamia is paralleled by a body of material culture which plays a role in the interpretation of Indus/Mesopotamian relations and the identification of Meluhha. Since the discovery of the Harappan civilization it has been recognized that there was some form of interaction between ancient India and the Near East (Sayce 1924). Indeed, the first useful chronology for the Harappan civilization came from Mesopotamia and inferences from Indus artifacts found there. A review of the material evidence will complement the textual evidence and serve as a useful guide for a discussion on the location of Meluhha.

There have already been a number of surveys of the archaeological record comparing Mesopotamia with the Harappan civilization: Mackay 1925; 1931a, b; 1933a, b, c;

1934; 1937; 1938: 639-68; Mode 1961; Wheeler 1968: 110-21; Aalto 1971; Lamberg-Karlovsky 1972; Chakrabarti 1975b; Asthana 1976; Ratnagar 1981; Al Khalifa and Rice 1986. I want to draw particular attention to Shereen Ratnagar's book (1981) since it is a useful source in this area. Elisabeth Durrant Caspers has also published a great deal on this (1963; 1965; 1970; 1971; 1972b; 1979; 1984).

Seals

The distinctive square "steatite" Indus stamp seals have played a prominent role in the discussion of contacts between east and west. Gadd's classic paper (1932) on the topic is still an invaluable source, as is Lamberg-Karlovsky's work (1972). Many of the seals Gadd discussed are now seen to be Persian Gulf types, but more purely Indus examples are there as well.

The culture-historical significance of the different seal types, *e.g.* cylinder, "Persian Gulf" button and square stamp seals, deserves some notice here, since they play an important role in the archaeological record of the Gulf and adjacent countries. The position taken in this paper is one that was developed by Lamberg-Karlovsky (1975: 362f):

"A related matter of shared ideology and meaning can be derived from seals. The use of very distinctive, highly individualized styles and shapes of seals of the Indus (square), Persian Gulf (round), Mesopotamia (cylindrical), and Turkmenistan-Seistan (compartmented) in the middle of the third millennium is, I believe, far from accidental. The seals in all of the above areas are believed to have served a similar function, namely, the sealing of goods to denote ownership. The goods then may or may not have been exchanged over long distances. Sealing, however, was not their only function. The seals made it possible to identify the mother country of the merchant and the origin of the traded commodity without opening the bundle of goods, thus facilitating storage, taxation, further shipment and other functions. The seals, in short, provided an overt symbol of ethnic identity as well as a practical tool for trade regulation. It is interesting to note that coincidence in the distribution of distinctive seal types is overlapped by the distribution of equally distinctive ceramic types."

A number of Indus or Indus-type seals have been recovered in Mesopotamia and Elam. The most useful of those for comparative purposes are as follows:

"Harappan" seals in Mesopotamia and Elam

1. Tell Umma. An Indus "unicorn" type seal impression was found at Umma. It has Harappan characters and appears to be the impression of a true Harappan seal, not one of mixed design. The impressions of "cloth" are visible on the back of the sealing. This object could have come from a package actually sealed in

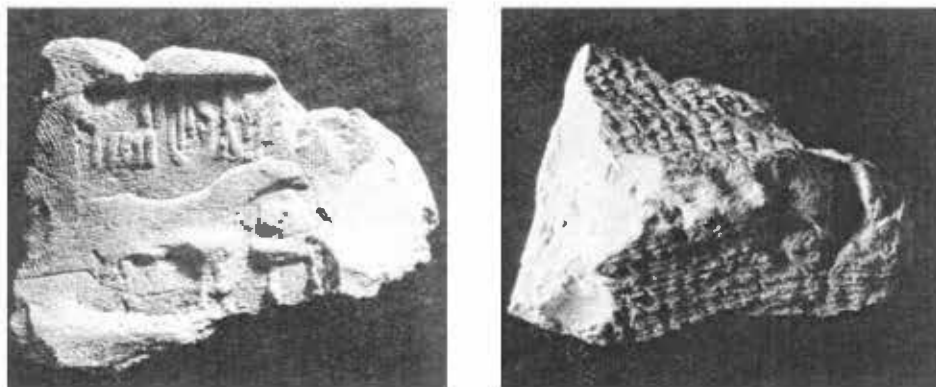


Figure 3 Indus sealing from Umma (Tosi 1987: 123, Abb. 95-6)

- the Greater Indus Valley (Scheil 1925; Tosi 1987: 123, Abb. 95f), Figure 3.
2. Ur. Pre-Akkadian but unstratified. Square seal with cuneiform writing. Animal with a lowered head might be a water buffalo (Woolley 1928: 26, pl. 11.2; Gadd 1932: no. 1), see Collon, this volume, Figure 15g.
 3. Ur. Pre-Akkadian or Akkadian. Circular stamp seal with Indus script, and boss, not the Persian Gulf type, on the back. Animal with lowered head. From Amar-Sin's tomb, mixed with later filling (Woolley 1932: 362-4, pl. 62.2; Gadd 1932: no. 16), see Collon, Figure 15f.
 4. Tepe Gawra. Late Early Dynastic/Early Akkadian (Speiser 1935: 163f, pl. 37b; Wheeler 1968: 117). Compare Marshall (1931: pl. 114.516) see Collon, Figure 10b-d.
 5. Tell Asmar. Akkadian house. Cylinder seal with elephant, rhinoceros and gavia (Frankfort 1933: 50; 1939: 305), see Collon, Figure 8c.
 6. Tell Asmar. Akkadian house. A square seal with arched back. On the face are concentric squares bordered with a bead pattern (Frankfort 1933: 50). Wheeler (1968: 117) suggests a comparison to Marshall (1931: pl. 114.516), see Collon, Figure 10a, c.
 7. Kish. Akkadian. Square unicorn seal found nine meters below the surface (Langdon 1931: 595), see Collon, Figure 9b.
 8. Kish. Probably Akkadian. Square unicorn seal with Harappan script (Mackay 1925: 697, pl. 10) found "below the pavement of Samsuiluna, son of Hammurabi" (Langdon 1931: 593), Figure 4.
 9. Kish. Probably Pre-Akkadian or Akkadian. "With reference to the swastika, attention should be called to a steatite seal from Kish, now in the Baghdad Museum, which bears this symbol. This seal, both in the shape and the design upon it, exactly resembles the little square seals of steatite and glazed paste that are so frequently found at Mohenjo-daro (Marshall 1931: pl. 114.508-10 =



Figure 4 Left—seal from Kish, probably of Akkadian date (Mackay 1925: 697, pl. 10); centre—seal from Kassite level, Nippur (Gibson 1977); right—seal from Ur (Gadd 1932: pl. 3.17)

Collon, Figure 20b). I do not think that I err in regarding the Kish example, which was found by Watelin, as either of Indian workmanship or made locally for an Indian resident in Sumer” (Mackay 1931a: 465).

10. Ur. Tomb of the Larsa Period. Cylinder seal with a large-eyed “Kulli” bull, a scorpion and human (Gadd 1932: no. 6; Legrain 1951: 632), see Collon, Figure 8d).
11. Lagash. Larsa Period. Inadequately described seal with Indus script. “Je ne puis passer sous silence un nouveau cachet de l’écriture indienne d’Harappa, trouvé à 1.75 m., au niveau des objets de l’époque de Gudea ou des restes de l’âge de Larsa” (de Genouillac 1930: 177).
12. Hama. ca. 2000-1750 BC. Portion of a cylinder seal of white stone with a large-eyed bull which might be of “Kulli” type (Ingholt 1940: 62, pl. 19), see Collon, Figure 33.
13. Nippur. Kassite. Square zebu stamp seal from the floor of a house, ca. fourteenth century BC (Gibson 1977), Figure 4.
14. Susa. Akkadian/post-Akkadian. Pierre Amiet has published a photograph of a circular seal from Susa with characters of the Indus script and the short-horned bull with lowered head (Amiet 1974: 109, fig. 15, see also 1972: 207.1643 = Collon, Figure 15I). This seal falls well within the limits of variation for seals of this type and can be compared to Gadd (1932: no. 17 = Figure 4, and nos 2, 16 = Collon, Figure 15b, f).

The following comparisons are of somewhat more debatable value than those just cited:

15. Susa. Unknown date. Cylinder seal with two bulls, possibly zebras, and a line of script which could be Harappan writing; although some form of an Iranian language should not be ruled out (Scheil 1900: 129), see Collon, Figure 8a.
16. The Louvre acquired a “unicorn” seal of typical Harappan type. No date, said to be from Tello (Thureau-Dangin 1925: 99) see Collon, Figure 9a.

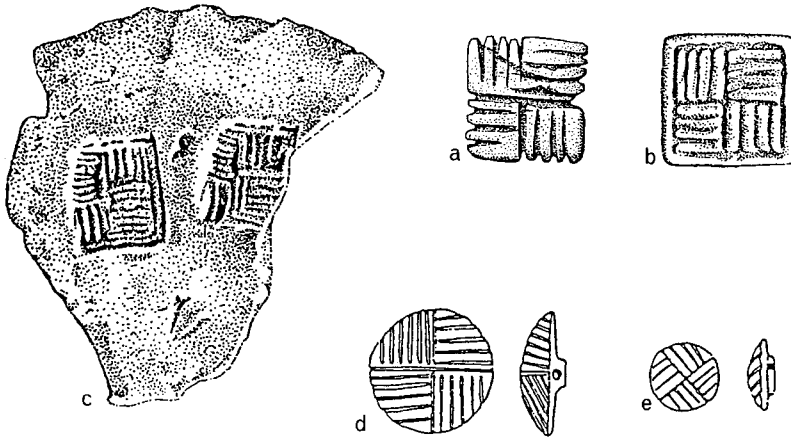


Figure 5 a—"Cushion-amulet" from Tell Brak (Mallowan 1947: 132, pl. 20.31); b—Seal from Harappa (Vats 1940: pl. 95.389); c—Seal impression from Lothal (Rao 1985: 325, pl.162A.1); d, e—Seals from Tepe Sialk (Ghirshman 1938: pls 86.117 and 259)

17. Cylinder seal without provenience. Large-eyed animals suggest an ancient Indian origin (de Clercq 1888: I, pl. 3.26), see Collon, Figure 8f.
18. Tell Brak. Jemdet Nasr Period. "Cushion-amulet square, length 12 mm, serpentine, black, perforated for suspension. The obverse face of the bead is decorated with a series of parallels forming a herring-bone pattern..." (Mallowan 1947: 132, pl. 20.31), Figure 5a. This might be compared to a seal from Harappa (Vats 1940: pl. 95.389), Figure 5b. Note that it is possible to orient the pattern in both seals so that vertical strokes are in the upper left-hand quadrant of the seal. The Jemdet Nasr date is, of course, quite early for this comparison to be wholly acceptable.
19. Tell Brak. Jemdet Nasr Period. A cushion-amulet, length 18 mm, serpentine, black, perforated for suspension; similar to no.15 above. Underside engraved with a design of two felines (Mallowan 1947: 132, pl. 20.33). This seal might also be compared to a seal from Harappa (Vats 1940: pl. 95.389). However, note that it is not possible to orient the pattern in the Brak example so that vertical strokes are in the upper left-hand quadrant of the seal; therefore a comparison to a seal impression, no. 1292, from Lothal (Rao 1985: 325, pl. 162.A.1), Figure 5c, with this orientation is more appropriate. Note that the same comment on the date of the comparison as offered above holds for this example.
20. Two additional seals which might compare to the Tell Brak examples come from Tepe Sialk Period III 5 (Ghirshman 1938: pl. 86.s.117), Figure 5d, and



Figure 6 Persian Gulf seals from Susa (Amiet 1972: II, 1716-20)

Period III (Ghirshman 1938: pl. 86.s.259), Figure 5e, which would date to the second half of the fifth millennium BC. Another seal of the “type”, this one in serpentine from the second half of the first millennium BC at Alishar Huyuk, has a resemblance to both of the seals just noted from Tell Brak. The Anatolian example has a long, perforated stud on the back (see von Osten 1937: fig. 90.e.748). This particular motif, which might have a connection with the genuine swastika, obviously has a long, possibly “dangerous” history.

More seals from Iran

Pierre Amiet also notes four other circular seals from Susa attributed to *l'époque des rois d'Anshan et Suse*. These seem to be of Persian Gulf type and do not have Indus script (Amiet 1972: II, nos 1716-20), Figure 6.

The seal from Hissar (H 116 noted by Chakrabarti and Moghadam 1977: 167) published by Schmidt (1937: 198f, but more clearly illustrated in Schmidt 1933: pl. 130) is a poor comparison. First it is a cylinder seal. More important, the bull is not a zebu. The animal is clearly portrayed without a hump and does not resemble the Indus “unicorn”.

There is a seal impression on the shoulder of a pot from Tepe Yahya Period IVA (2400-1800 BC) (Lamberg-Karlovsky and Tosi 1973: pl. 137). This impression is incomplete, but the characters which are fully shown would fit within the corpus of Harappan glyphs.

Beads

Beads, especially those of etched carnelian, have been discussed in terms of Indus/Mesopotamian contact. Two recent treatises on this topic (Reade 1979; During Caspers 1972a; see also Dikshit 1949) have covered the ground exceedingly well and the topic

needs only to be summarized here. Etched beads in India and the Near East have a long history, beginning with the Harappan civilization. The technique might have been lost at, or shortly after, the Indus eclipse, but it is well documented in the mid-first millennium BC, especially at Taxila. The concerns of this paper deal only with the initial period of production, in the Bronze Age.

The technology of etched carnelian beads

The technology of etching carnelian has been studied by Ernest Mackay (1933; 1937) and Horace Beck (1933). Mackay (1933) was able to observe a carnelian worker and his son at Sehwan in central Sind undertaking this process. To their knowledge they were the last in the province to know this very simple art. Their technique involved the preparation of a paste from washing soda and the juice of the thorny shrub *Capparis aphylla* (Sindhi = *kirar*). The design was painted on the carnelian using this mixture. It was then allowed to dry while sitting on an iron plate that had been placed over an ember hearth. Once dry the carnelian was buried in the coals and baked for about five minutes, during which the “oven” was fanned. The stone was then withdrawn from the fire and cooled for about ten minutes. It was then cleaned and the bright, crisp white lines were revealed. The quality of the stone and firing temperature are both critical variables for a successful “take”. Beck’s observations were more complex and add some variety to the means used to achieve the decorated end, including an “inferior” technique. He and his informants essentially reinvented the technique (1933: 384-7). We know from broken examples from Chanhudaro (Mackay 1943: 200f, pl. 79.14) and Bihar (Beck 1933: 386) that the beads were etched prior to drilling.

Etched carnelian beads in Mesopotamia

The catalogue of etched carnelian beads from Mesopotamian sites is a substantial one and there is no advantage to repeating what During Caspers (1972a) and Julian Reade (1979) have presented elsewhere. The one exception to this are the six beads from Tell Asmar (Frankfort 1933: 50), Figure 7, courtesy of the Oriental Institute, University of Chicago. These are a part of the Akkadian occupation of the site and are part of the catalogues, but have never been carefully drawn.

The “Royal Graves” at Ur contained a large number of beads of this general type. Others have been found at Kish and Tell Asmar in Akkadian contexts. There is one Early Dynastic etched bead from Tell Abu Salabikh and another from Nippur from Late Early Dynastic or Early Akkadian times. These occurrences, and others, are all documented in Reade (1979: 8-23), Figure 8.

Etched carnelian beads in Iran

There are some etched carnelian beads in Iran. The catalogue is presented below:

1. Tepe Hissar IIC. Necklaces H 3215, H 3216 (Schmidt 1937: 229, pl. 35).
2. Tepe Hissar III. H 400 “Little Girl’s Grave” (Schmidt 1933: 438; pl. 144c).
3. Shah Tepe IIA (Arne 1945: pl 92, fig. 612.B.II.S7).

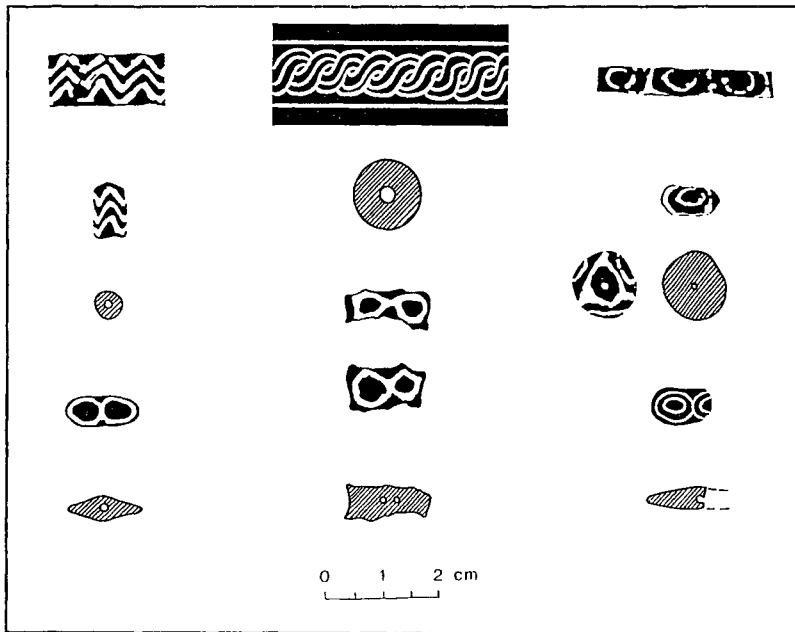


Figure 7 Etched carnelian beads from Tell Asmar (courtesy of the Oriental Institute, Chicago)

4. Kalleh Nisar. Akkadian cist grave (Vanden Berghe 1970: 73).
5. Susa. Akkadian grave (de Mecquenem 1943: fig. 84.7).
6. Tepe Yahya. One surface find, another in uncertain context, but probably later than 2000 BC (During Caspers 1972a: 92).
7. Jalalabad. Mid-third millennium. Tehran Museum, no. 26036. Etched carnelian, two white on red, one black on red (Chakrabarti and Moghadam 1979: 167, fig. 10).
8. Marlik. Late second/early first millennium. Tehran Museum, no. 25457. Etched carnelian, two white on red, capped in gold (*ibid.*).

Etched carnelian beads from Indus sites

Indus sites which have produced etched carnelian beads are Mohenjo-daro (Marshall 1931: pl. 146; Mackay 1938: pls 135-8); Harappa (Vats 1940, pls. 128-32; Wheeler 1947: 123, pl. 51.14), Chanhu-daro (Mackay 1943: pl. 79), Figure 9; Kalibangan (Anon. 1960-1: 32: pl. 49B), Lothal (Rao 1962: fig. 27.5; 1985) and Rojdi (Possehl and Raval 1989). This was a popular bead type in the Harappan civilization, so popular in fact, that imitation beads of other materials were decorated in this way (Marshall 1931: pl. 157), Figure 11. Once again, individual finds are fully documented by Reade (1979: 8-23), except for Rojdi, which can be summarized here, since there are new beads from this site.

Rojdi has produced five etched carnelian beads, Figure 10. All of them are lenticular in cross section and have concentric circles etched in white on red to orange stone. These

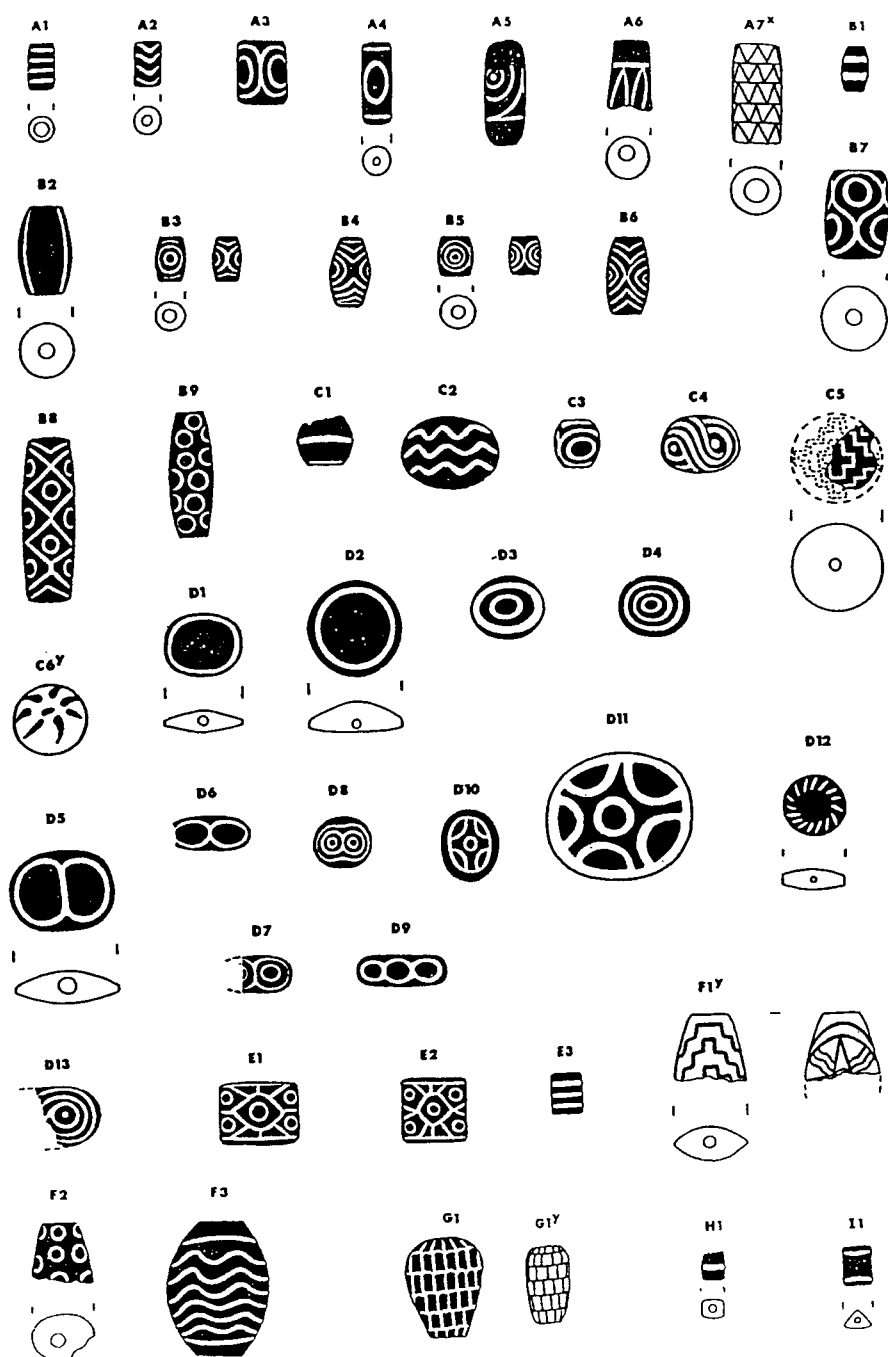


Figure 8 Etched carnelian beads from Mesopotamia and Iran (Reade 1979: fig. 1)

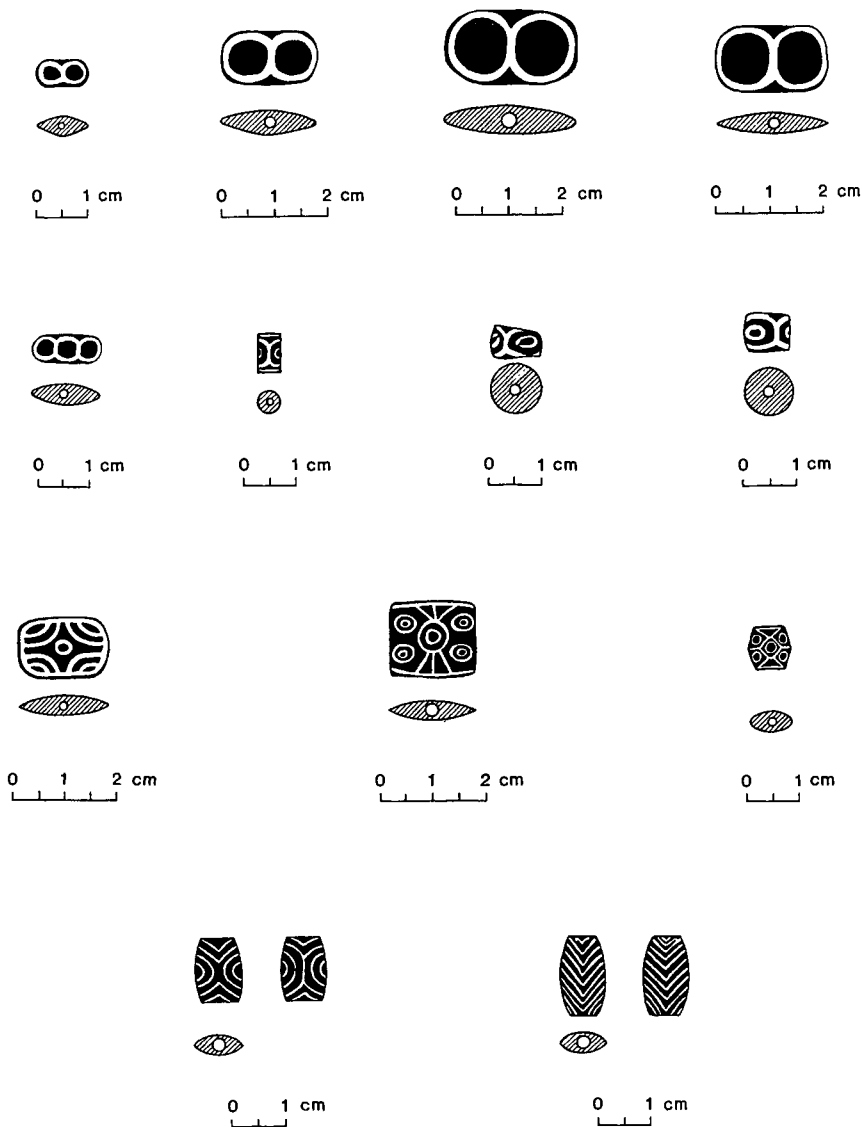


Figure 9 Etched carnelian beads from Chanhu-daro (Mackay 1943: pl. 79).

concentric circles vary in number from three to four. The Rojdi beads are all etched on both sides. The figures presented here, however, show only one design, since it was not possible to view conveniently both sides of all of the objects. There is one bead of this type from Lothal (Rao 1985: fig. 131.5). All of these beads from protohistoric Gujarat are all very much alike, save for variation in their proportions and the number of etched concentric circles. It would seem, therefore, that they should be considered distinctive

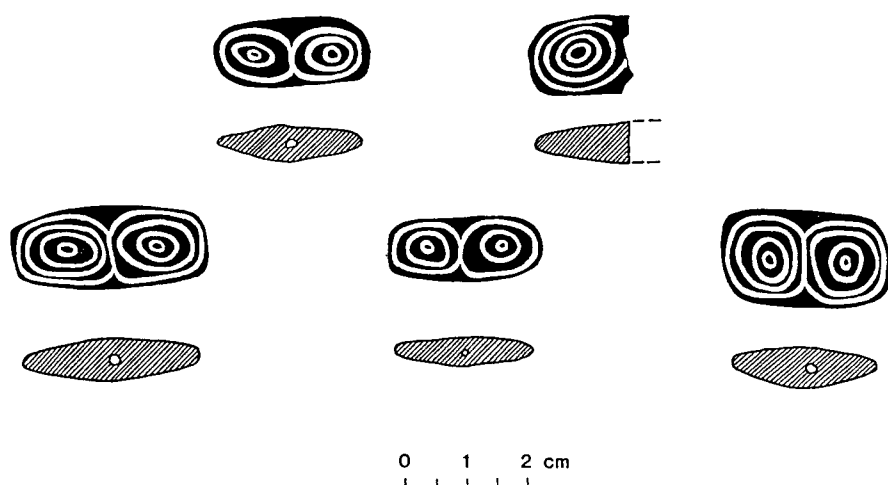


Figure 10 Etched carnelian beads from Rojdi; upper right from Gateway

of the region and that the design had some local meaning to the original owners. They seem to compare to the example given by Reade (1979: fig. 2h).

The only well documented etched carnelian bead from Rojdi came from the Gateway area during the 1982-3 season of renewed work at the site (Possehl and Raval 1989). It is broken. It was found below the foundations of the Gateway in earth with a few sherds of Harappan pottery. It should therefore date to Phase A or B of the Sorath Harappan occupation at the site: 2500-2000 BC.

The remainder of the beads comes from the first seasons of work at Rojdi (Anon. 1957-8; 1958-9b.; 1962-3; 1964-5) and is with the Gujarat State Department of Archaeology. The one excavated example comes from the old Period IB, which should be comparable to Rojdi B, or 2200-2000 BC.

Some general observations on etched carnelian beads

Julian Reade's observations (1979: 24-6) on some of the matters which pertain to etched beads and the development of Indus/Mesopotamian contact are worth noting. First, the bulk of the etched beads comes from Mesopotamia, with a very few from Iran and one



Figure 11 Imitation etched carnelian beads from Mohenjo-daro (Marshall 1931: pl. 157)

from Umm an-Nar in the Gulf. But, the beads are most frequently associated with burials in Mesopotamia and the differences between the two principal regions in this regard should be considered. There are very few excavated graves at Indus sites, and many of them are quite poor, at least in terms of material culture. Also, there is apparently a significant number of unpublished Indus beads, and some from Susa as well (During Caspers 1972a: n. 37). Therefore the published archaeological record does not seem to reflect an archaeological reality. Reade's figures 2 and 3 convincingly illustrate the fact that there are close parallels from a number of sites in the two regions. The presence of the technology in the Indus valley at Chanhudaro, along with the fact that ancient India was the recognized source of carnelian (During Caspers 1972a: 95-7) tells us the direction of the influence. The dates from Mesopotamia suggest that etched carnelian beads were present in Early Dynastic III B times (2600-2450 BC). A late chronology for trade in these items would not seem to be something that can be sustained (Tosi 1976: 88, 92). This chronology is perfectly in keeping with that for Indus-type long barrel-cylinder beads (Chakrabarti 1982, see below).

There is some evidence that the etched beads were imported but some of them could have been made in Mesopotamia. In fact, it was Ernest Mackay's opinion that: "Indeed, it is not at all unlikely that bead-making in Sumer was carried on by Indian craftsmen" (1943: 212). There was an Akkadian grave at Ur (PG 958) with the remains of what Woolley (1934: 206f) says "...can only be described as the working stock-in-trade of a bead-manufacturer." The material in this grave included chips of carnelian and lapis lazuli, an unfinished lapis bead, a small copper drill and other implements that do not rule out this possibility. Moreover, Reade's bead type F1 has a shape that might be Indian and the cruciform design on one side is found in both regions, and elsewhere, but the second side has the distinctive Mesopotamian sign for the sun god (Reade 1979: 25). This would seem to be good evidence for the possibility that this bead was made in Mesopotamia.

Segmented faience beads

One of the most significant types of faience beads is the so-called "segmented" variety. About thirty examples come from Harappa (Beck, in Vats 1940: 406), some in late levels (Wheeler 1968: 99), and a number from Mohenjo-daro (Mackay 1938: 511), Mature Harappan Chanhudaro (Mackay 1943: 205) and Rojdi where they come from Harappan levels of the old Period IB which should be equivalent to the new Rojdi B, 2200-2000 BC (M.H. Raval, personal communication and, with thanks for co-operation, Figure 12; see also Stone 1949: 201-5). They are also said to be quite common in the Prabhas culture (period II) at the site of Somnath on the southern coast of Saurashtra (Dhavalikar 1984: 249).

There are occurrences of segmented faience beads in Mesopotamia and the type is distributed widely. They come from Tell Brak in northern Syria in the Jemdet Nasr

period, about 3000 BC (Mallowan 1947: 254, pl. 84.2). Other segmented beads of this type have been found at Kish (Mackay 1929: pl. 60.39f) and Tepe Hissar III (Schmidt 1937: pl. 145.H.490a). Copies in gold of this bead type also occur in the Royal Graves of Ur (Mackay 1943: 205). In Egypt segmented faience beads occur in Pre-Dynastic Badarian contexts (Brunton and Caton-Thompson 1928: pl. 49) and the XVIIIth Dynasty (Mackay 1943: 205). On Crete they come from Middle Minoan III (Evans 1928: II, 427). "Richie has shown by spectrographic analysis that two segmented beads respectively from Knossos and Harappa are absolutely identical in composition, and it is presumed therefore that they were derived from the same source at approximately the same time, *i.e.* about 1600 BC. But what the source was remains to be discovered" (Wheeler 1968: 99f).



Figure 12 Segmented faience bead from Rojdi

Long barrel-cylinder beads

Dilip Chakrabarti (1982) discusses the occurrence of what can be called "long barrel-cylinder" beads in the Indus Valley, Mesopotamia and Iran, Figure 13. These beads, in a variety of materials (*e.g.* carnelian, lapis lazuli, terracotta) are long (in excess of 5 cm) and slender, sometimes with a slight thickening toward the centre. Based on their high density at Indus sites and the fact that they have been found in various stages of manufacture at Chanhudaro (Mackay 1943: pl. 93.14), there is little doubt that it is a

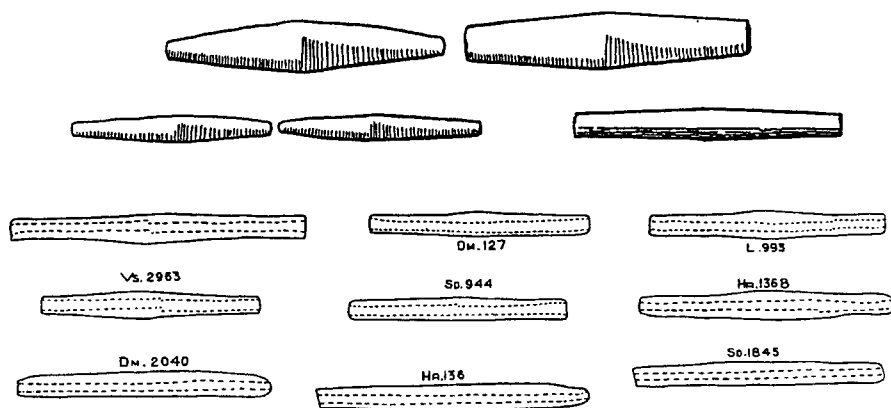


Figure 13 Long barrel-cylinder beads. Above—from Ur (Woolley 1934: 367, fig. 74); below—from Indus sites

Harappan type. "...It may be said that this is a distinct Indus bead type, as distinctive in its own way as etched carnelian beads. And unlike the latter, which are also known to occur in later Indian historic contexts, this bead type died with the Indus Civilization" (Chakrabarti 1982: 265). Also see Allchin (1979: pl. 53) for a very fine photograph of the beads of this type from Kish.

Long barrel-cylinder beads are documented in the following places:

1. Mohenjo-daro (Mackay 1931b: 511-2, pls 145.24-32, 151b; 1938: 512f, pls 82.9f, 111.32.40, 137.47, 138.20, and 139.65.70.78).
2. Chanhudaro, Mature Harappan (Mackay 1943: 203f, pl. 93.14; Museum of Fine Arts, Boston, 36.1507 and 1564).
3. Harappa (Beck 1940: 400, pl. 131.2a, b).
4. Lothal (Rao 1973: pl. 29E, upper left-hand bead).
5. Kish (Mackay 1929: 184, pl. 43.9, with similar beads from burial 51). Mackay (1931b: 511f) indicates that this bead type at Kish occurs in pre-Sargonic contexts. See Allchin (1979: pl. 53).
6. Ur (all from Chakrabarti 1982: 265f, pl. 12: Haddon Museum, Cambridge, 47.2215B, from "Royal Graves"; 47.2116, 2 specimens, no specific contexts; 48.2411, "Early Sumerian". The University Museum, Philadelphia, 30.12.566-7, Akkadian or Gudea periods; 32.40.277, 2 specimens, Akkadian grave; U 17745, Akkadian grave).

Chakrabarti and Moghadam (1977) document long barrel-cylinder carnelian beads from Iran at Susa, Marlik and Jalalabad. Not all of the specimens are well provenienced. The Jalalabad specimens come from a surface collection. This site is apparently a Bakun 5A settlement near Persepolis and should be dated to the first half of the third millennium BC, extending to *ca.* 2500 BC. The context at Susa is unknown, at least for the bead discussed by Chakrabarti and Moghadam. The Marlik bead would date to the end of the second or beginning of the first millennium BC, and may be outside our time frame. The catalogue of long barrel-cylinder beads presented by Chakrabarti and Moghadam (1977: 167) is as follows:

1. Jalalabad, mid-third millennium BC. Tehran Museum, necklace no. 26040: carnelian, long barrel-cylinder (this necklace has four more broken long barrel-cylinder beads). Tehran Museum, no. 26036: two carnelian long barrel-cylinders.
2. Susa. Tehran Museum, no. 11726: carnelian, long barrel-cylinder.
3. Marlik, late second/early first millennium BC. No Tehran Museum identification, but the necklace is definitely from Marlik: carnelian, long barrel-cylinder.

The long barrel-cylinder beads provide additional material evidence for Indus-Mesopotamian interaction within the Late Early Dynastic/Akkadian periods. In this sense the distribution is in complete harmony with the chronological and cultural conclusions suggested by the etched carnelian beads.

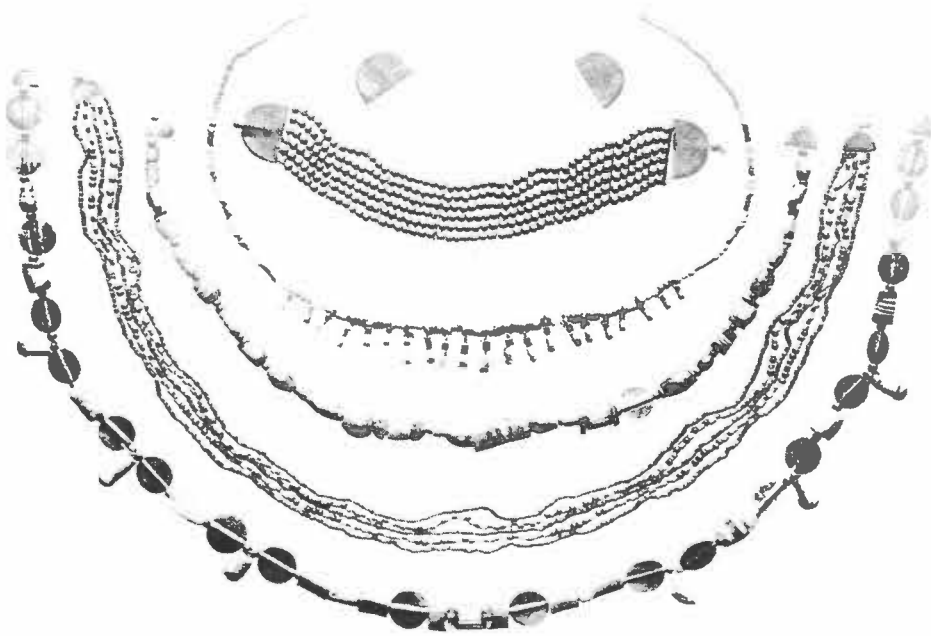


Figure 14 Jewellery including flat disc beads and hemispherical "necklace terminals" from Mohenjo-daro (Marshall 1931: pl. 149)

Necklace and bead miscellanea

There are a few other points dealing with necklaces that may be noted. First, gold caps on beads made from semi-silicious stones are found at Mohenjo-daro (Marshall 1931: pl. 149), the Mature Harappan at Lothal (Rao 1985: 633, pl. 296A.13) and have also been found in "early graves at Ur" (Mackay 1931a: 465). Flat, gold disc beads are listed among the bead types from the Royal Graves (Woolley 1934: 366, fig. 70.16), Figure 15; these are identical to examples from the Mature Harappan at Lothal (Rao 1973: pl. 29B), Figure 15, and Mohenjo-daro (Marshall 1931: 515, pl. 149.7), Figure 14. Beads of this Harappan type are also found in room seven of the Funerary Complex at Altyn Depe in Central Asia (*ca.* 2500-2200 BC; Masson and Kiiatkina 1976, in Kohl 1981: 122, fig. 11). Other Harappan material at Altyn Depe includes ivory pieces, two seals (Masson 1977, in Kohl 1981: 151) and an "eagle amulet" (Sarianidi 1976, in Kohl 1981: 234) comparable to one from Harappa (Vats 1940: pl. 91.25), see Figure 16.

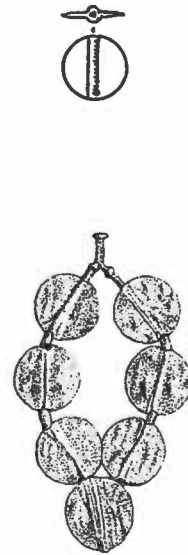


Figure 15 Flat disc beads. Above—from Ur (Woolley 1934: 366, fig. 70); below—from Lothal (Rao 1973: pl. 29B)

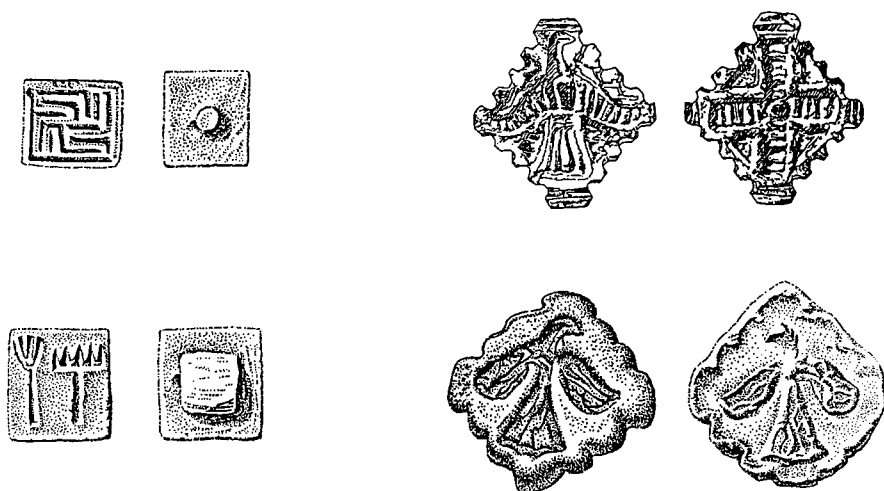


Figure 16 Left—Harappan seals from Altyn Depe (Masson 1977, in Kohl 1981: 151); bottom right—"eagle amulet" from Altyn Depe (Sarianidi 1976, in Kohl 1981: 234); top right—"eagle amulet" from Harappa (Vats 1940: pl. 91.255)

Flat, hemispherical "necklace terminals" are found at Mohenjo-daro in gold, copper and faience (Marshall 1931: pls 149.1-3, 151b), Figure 15. Gold terminals of this kind also come from the Lothal Mature Harappan (Rao 1985: 633f, pl.295A). This type of necklace terminal does not occur in Mesopotamia. However, they have been found at Byblos, "...where they date from the period of the Fourth Dynasty of Egypt" (Mackay 1931a: 462), *ca.* 2600 BC. Gold terminals which are virtually identical to the Mohenjo-daro examples, also of the Fourth Dynasty, have been found at Gizeh in the grave of a woman (Hassan 1931: 296; Mackay 1931a: 462). Necklaces painted on pots from Tepe Douecya, 3 km from Susa, have Mohenjo-daro type terminals (Mackay 1931a: 462f, fig. 10), Figure 17.

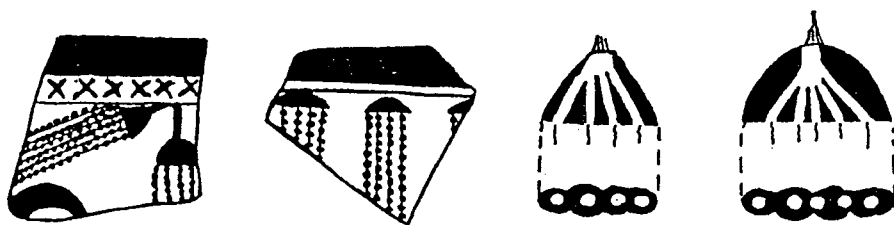


Figure 17 Flat hemispherical "necklace terminals" on painted pottery from Tepe Douecya (Mackay 1931a: 462f, fig. 10)

Sculpture of the Intercultural Style

Philip Kohl has conducted the most significant study of the so-called carved “steatite” materials from the early Near East and India (1974; 1975; 1976; 1978). His “Intercultural Style” is a synthesis of motifs presented on vessels carved from soft stone of varying types, but traded from the Indus to the Mediterranean, extending into the Gulf and Central Asia, Figure 18. The scope of these motifs, their content and themes, indicate shared beliefs, not necessarily integrated systems, or religions, but common thoughts. This might be thought of as some sort of ancient leitmotif.

There are several pieces of this carving style in Harappan context, including the Kulli culture. These are all described by Kohl and by Durrani (1964). There is little to be said of them, except that the style documents the Indus as a player in this exchange system and assists in establishing another dimension of interaction.

In Mesopotamia, the Gulf and Iran, there are a few pieces of the Intercultural Style with the zebu portrayed in unmistakable clarity. While the natural distribution of *Bos indicus* is not precisely known, it does seem to be indigenous to the Indian subcontinent (but see Bökönyi 1985 for a recent discussion, and Grigson, this volume). Its occurrence in the west is therefore informative since it probably allows us to assume that ancient Indian beliefs were a part of the Intercultural Style and it may have been one of the places within which the style itself was shaped. The latter possibility is best documented at two places with splendid zebras carved on soft stone vessels: Tell Agrab (Frankfort 1936: 434) and Khafaje (Frankfort 1956: 19, fig. 9). These would date to Early Dynastic III.



Figure 18 Intercultural style vessels. Above—from Tell Agrab; below—from Khafaje

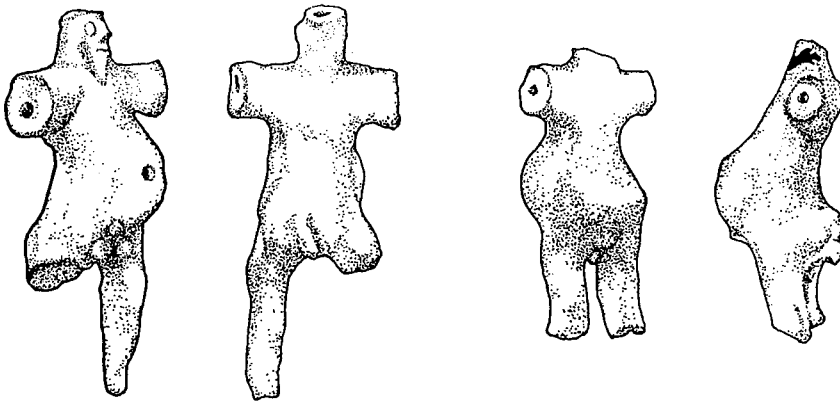


Figure 19 Terracotta figurines. Left—from Nippur, 10 cm high; right—from Chanhudaro (Mackay 1943: pl. 59.2)

Figurines

George Dales (1968a: 19-21) has drawn attention to four male terracotta figurines, three from Nippur and one from Chanhudaro, Figure 19, which share a number of important, interesting features. First, they were all puppets, with arms separately attached at the shoulders, which are well out of proportion to the rest of the body. They are also fat nudes with prominent buttocks and traces of a penis still visible. They may therefore have been ithyphallic. Most of the figurines have prominent holes at the navel and between the buttocks and there is sometimes evidence for a tail.

The three figurines from Nippur come from the “Scribal Quarter” dated to the Ur III period. The most complete of them (*ibid.*: 20, fig. 1) was found on the floor of a house (McCown and Haines 1967: pl. 28.9) and is in the collections of The University Museum (no. 53-11-69). A second example comes from an Ur III house. Unfortunately the published photograph is not entirely clear, but it seems to conform to the type. The third Nippur example was a surface find. Only the torso is preserved, but it too clearly fits within the bounds of the type (Dales 1968a: 21).

The Chanhudaro figurine, on loan from the Museum of Fine Arts, Boston (*ibid.*: 21, fig. 2), is also in The University Museum (Mackay 1943: 166f, pl. 59.2). It comes from the second of the two Mature Harappan occupations on Mound II of the site (*ibid.*: 54). This figurine compares well to at least three others from Mohenjodaro (Marshall 1931: pl. 153.38; Mackay 1938: pl. 78.12.3), Figure 20.

The significance of these figurines has been discussed by Dales (1968a: 19): “The novel type of nude male figurines under consideration here is emphatically not a characteristic Mesopotamian creation. Neither male nudity, male obesity nor animation are found among Sumero-Akkadian figurines of this date”. Animated “puppets” are very



Figure 20 Terracotta figurines from Mohenjo-daro (Marshall 1931: pl. 153.38; Mackay 1938: pl. 78.12 and 3)

much a part of the Harappan world. Moreover, there is nothing about these figurines which suggests that they are not of ancient Indian origin, or inspiration. It is therefore quite reasonable for us to think of them as being at “home” in the Greater Indus Valley.

The import of a monkey figurine in carnelian is reported during the Larsa period (Figulla and Martin 1953: no. 295; Oppenheim 1954: 12, n. 21). This object is not documented in the text as coming from Meluhha, and it was omitted from the enumeration given above for this reason. However, other documents clearly associate carnelian with this land and some discussion of monkey figurines in general is in order.

Ratnagar (1981: 149-53) has an extensive discussion of this matter. She lists twenty-three monkey figurines from Harappan, Mesopotamian and Iranian sites from Early Dynastic to Larsa times. Eleven figurines come from Mesopotamia, five from Iran and the remaining seven from Harappan contexts. The comments she makes (*ibid.*: 149f) with respect to the home for the monkeys are worth attention:

“It can be argued that since monkey figurines are known as early as the Jemdet Nasr Period at Brak (Mallowan 1947: 42, pls 7.6-7, 9.2) and Warka (Heinrich 1937: 52), and since monkey figurines of Egyptian type have been found at Byblos (Ward 1964: 13f), the Mesopotamian figurines were not Indian but Egyptian in origin. But the archaeological evidence available does not point to Mesopotamian-Egyptian contacts, except of the most indirect kind, for the period under study (Ward 1964: 1f). It is, therefore, just possible that the Brak figurines owe their ultimate origins to Egypt, whereas the majority of later figurines were Indian in inspiration or authorship. The Brak figurines appear to depict the cynocephalus baboon (Mallowan 1947: 42) or *Papio cynocephalus* in respect of the face and the length of the limbs. This species is today found

in central Africa. On the other hand, the majority of the later figurines appear to be of an Indian species, as we shall attempt to demonstrate in the following discussion.”

Ratnagar’s list convincingly argues her point and it appears likely that the bulk of the Early Dynastic to Larsa period monkey figurines in Mesopotamia depict Indian primates.

Dice

Dales has also discussed cubical dice and their relation to Indus-Mesopotamian interaction. He notes that there is a cubical terracotta die from Tepe Gawra from “Old Akkadian levels” which is said by Speiser to be of Indian origin (Dales 1968a: 18). The numbers on this die are arranged so that 2 is opposite 3, 4 opposite 5, and 6 opposite 1. Modern western dice are arranged so that the numbers on opposite sides add to seven. There are also broken clay dice in a hoard found in a pottery vessel that was buried in the floor of an Akkadian house at Tell Asmar (Frankfort 1933: 48). Two dice were found at Ur. One of bone (Woolley 1955-6: 44, fig. 7a) has lightly incised dots now partly obliterated, but whose order is certainly not like modern dice. It was dated by Woolley to the First Dynasty of Ur (*i.e.* Early Dynastic III). The second die is of grey clay (*ibid.*: 44, 79, fig. 7b). Its dots are arranged 1 opposite 2, 3 opposite 6, 4 opposite 5. It was found loose in the soil of Pit X in the Royal Cemetery and could date to any time from Early Dynastic III to Ur III (Dales 1968a: 18). Finally, there is a single cubical clay die from Nippur in Kassite contexts (McCown and Haines 1967: pl. 153.11).

Games were popular in Mesopotamia and the Near East, including Egypt. Boards and gamesmen are a prominent part of the archaeological record. Dice, however, are unusual and seem to be comparatively late in these regions. There is some archaeological evidence which suggests that South Asia and the Harappan period are the loci of innovation in this matter (Brown 1964; Dales 1968a: 18).

“Sir John Marshall in his Mohenjo-daro excavation reports (1931: 551f, pl. 152.7-10) that ‘many’ dice were found at the site, although he publishes only four examples. They are made of terracotta and the numbers are arranged 1/2, 3/4, 5/6. Ernest Mackay (1938: 559f), who continued the Mohenjo-daro excavations, reported that dice were found at ‘all levels’ of the Harappan city. Published examples include three terracotta dice, one with opposite dots arranged 1/3, 2/4, 5/6 (*ibid.*: pl. 140.19); one with dots arranged 1/2, 3/4, 5/6 (*ibid.*: pl. 140.20), and another with identically arranged dots but inlaid with tiny beads (*ibid.*: pl. 142.84). Three stone dice are also published: one of yellow agate with dots arranged 1/2, 3/6, 4/5 (*ibid.*: pl. 140.63); one of white limestone with dots arranged 1/3, 2/5, 4/blank (*ibid.*: pl. 142.85); and one of light grey stone with dots placed 1/2, 3/5, 4/6 (*ibid.*: pl. 142.86). From the Harappan period levels at the city of Harappa itself, seven examples have been published (Vats 1940: pls 120.46-8.51-4), two of stone, four of terracotta and one of faience.

Four of these have dots arranged 1/2, 3/4, 5/6; two have them placed 1/2, 3/5, 4/6; and a unique terracotta example has the dots placed in modern order—*i.e.* with opposite dots adding up to seven” (Dales 1968a: 19).

One terracotta cubical die was recovered from Alamgirpur, 45 km northeast of Delhi (Anon. 1958-9a: 51f, pl. 62). Three sides of the die have been illustrated and the numbers 2, 4 and 6 can be seen, but no more. Another cubical terracotta die was found at Lothal (Rao 1985: 503, pl. 219A) and is marked 1/2, 3/4, 5/6.

Both cubical and oblong “stick dice” are known from Harappan sites. The contemporary Indian games of *chaupar* and *pachisi* (“parcheesi”) seem to be developments out of much simpler games dating back to the third millennium.

“If we look at the equipment used in playing *chaupar* and *pachisi* we find that not only the men, but also the oblong dice for *chaupar* and the cowries for *pachisi* are as old as the third millennium BC, while the four-armed cruciform board seems to be a development from much simpler gaming boards, marked in squares or houses, of the same period” (Brown 1964: 33).

It can be added that the Vedic Aryans were fond of gambling and there are references to both the sport and dice in Vedic texts. In the *Rig Veda* (10.34) which dates to about 1000 BC, there is a charm intended to cure the hapless, hopeless gambling loser. Dice are mentioned in the *Atharva Veda* as well (2.3; 4.38; 6.118; 7.52; 7.109: Brown 1964: 34).

This evidence is, of course, not especially robust, but the dice do seem to be out of place in Mesopotamia and their occurrence is chronologically well placed with respect to other evidence for Indus-Mesopotamia interaction.

Ceramics

Four Harappan ceramic types have been noted within Mesopotamian contexts: perforated ware, feeding cups, “Knobbed Ware” and “Reserved Slip Ware”.

Perforated ware is widespread and the vessel forms sufficiently diverse that the comparative value of this ceramic is highly questionable (Lamberg-Karlovsky 1972: 225).

Feeding cups (Marshall 1931: pl. 83.20; Thapar 1975: 30.5) in ceramic are common on Indus sites. They are paralleled at Ur in both gold and pottery (Mackay 1931a: 465). This comparison is, again, a weak one.

Knobbed Ware is present in Mesopotamia at both Tell Asmar (Frankfort 1933: 50) and Khafaje (Delougaz 1952: 188). These sherds can be compared to Marshall (1931: pl. 78.16), Figure 21. Lamberg-Karlovsky (1972: 225) also draws attention to reports of this ceramic from Iran: Shah Tepe (Aren 1945: pl. 27.6, figs 167f); Tepe Sialk (Ghirshman 1938: I, pl. 28.6) and Tepe Yahya (Lamberg-Karlovsky 1970: fig. 29.o). He goes on to say that: “This type of ware cannot be used to strengthen any argument for Indus-Mesopotamia relations” (1972: 225).

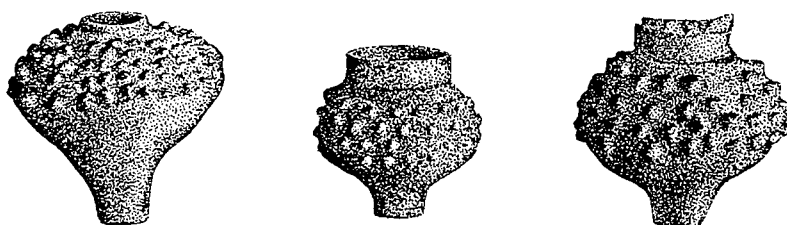


Figure 21 Knotted Ware from Mohenjo-daro (Marshall 1931: pl. 78.16)

Henri Frankfort (1937) has suggested that a Scarlet Ware vessel from Tell Agrab with a bull, Figure 22, is in some way “Indian”. It is now clear, I think, that this image may not be “Mesopotamian”, but neither is it Harappan.

The significance of the Reserved Slip Ware at Indus sites and in Mesopotamia is a topic in need of further research. At least one colleague has expressed an opinion that it is not a useful category for comparison (Chakrabarti 1978). This may be the case, but recent advances in the scientific analysis of ceramics may prove to be a meaningful way of testing this material, if sherds could be assembled at a common laboratory. The possibility of typological comparison seems to have been first made by Mackay (1931a: 471):

“In connection with the two pieces of glazed pottery (Marshall 1931: pl. 159.1-2), the method of whose ornamentation has already been described, I should like to point out that the same device of partially removing a dark-coloured slip with the aid of a comb or other such instrument is also known at Ur. This ‘reserved slip ware’, as it is termed, occurs in Woolley’s stratum E, a very early level... (Woolley 1930: 331, 339), and does not differ in general technique from the similar ware at Mohenjo-daro, though the latter was glazed. We have, however, found one example where a light slip has been removed in parts from the surface of unglazed pottery instead of, as at Kish, a dark slip from a lighter ware. It is of interest to note that this ‘reserved slip ware’, whether glazed or not, is only found in the lower levels of Mohenjo-daro, which appear to correspond with those of Ur.”



Figure 22 Painting on Scarlet Ware vessel from Tell Agrab (Frankfort 1937)

Additional Reserved Slip Ware is documented in Mesopotamia at Tell Brak (Mallowan 1947: 191, pl. 43, top row):

“Fragments of painted pottery, consisting of a buff clay painted over with a reddish brown wash. The design is a reverse obtained by drawing a comb over the paint to produce a series of horizontals, zigzags and curves...the fact that they only occurred in Sargonid levels both on the Balikh and in the Khabur valley suggests that the ware is not later than the Agade period, *ca.* 2300 BC, and may be earlier...”

Mallowan (1946: 135) also found pottery comparable to the Reserved Slip Ware from Tell Brak at Tell Jidle in level five which he attributes to the Akkadian period. He further notes the possibility of this ceramic type being present at Hama as well. Chakrabarti documents its presence at other sites as well (1978: 162) including Ur, Susa and Nippur.

In addition to the Mohenjo-daro examples, Reserved Slip Ware occurs in the Mature Harappan levels at Chanhudaro (Mackay 1943: 72, pl. 38.26f.29) and in Period IA at Surkotada in Kutch where it would also date to the Mature Harappan (Joshi 1972: 124, 126, fig. 8). At least some of this pottery from Chanhudaro and Surkotada is the blue-grey, “glazed” type found at Mohenjo-daro. Reserved Slip Ware was found at other sites in Kutch. At Pabumath it is associated with the Mature Harappan (Anon. 1977-8: 21) and at Lakhapar, Jhangar and Kotada (Joshi 1972: 111-3) it was found on the surface. Kotada is a major, unexcavated site in Kutch which is larger than fifty hectares based on the author’s field notes.

S.R. Rao (1985: 454, pl. 184) reports several examples from Lothal. He describes this ceramic as follows:

“Some varieties of Reserved Slip Ware, *viz.* of red, cream, grey and light grey fabric, have been found at Lothal. In all these cases the technique consists of applying a second slip over the first one covering the body surface and removing partially the upper slip with a sharp, comb-like instrument so as to expose the lower slip side by side with the upper one.”

At Lothal this ceramic is found in Phases II-IV, the Mature Harappan occupation. One possible Reserved Slip Ware sherd has been reported from Manda, near Jammu. It was found in Period IA where there is an overlap between Harappan and Early Harappan ceramics (Joshi and Madhu Bala 1982: 187).

Reserved Slip Ware is also reported in Baluchistan at Periano Ghundai (Stein 1929: pls 6, 8) and Moghul Ghundai (*ibid.*: pl. 11) as well as Surab and Bampur (de Cardi 1965: 177; 1970: 279). Chakrabarti (1978) discusses the chronological issues at each of these sites, which do not rule out an Indus/Mesopotamian connection.

To my knowledge no single scholar since Mackay has had an opportunity to handle examples of Reserved Slip Ware from both Mesopotamian and Harappan sites. The descriptions of this ceramic are sufficiently convincing that there may be a legitimate connection between east and west. However the similarities may result from a rather

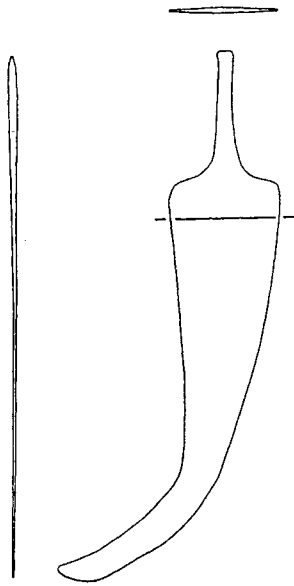


Figure 23 Copper blade from Harappa (Vats 1940: pl. 122.6)

simple technique, without comparative value. After all, the blue-grey glazed Reserved Slip Ware from Mohenjo-daro, Chanhudaro and Surkotada could be quite different from the reddish variety in Mesopotamia. This could be resolved by bringing relevant sherds together so that direct, visual comparisons could be made. As the moment there is little to be said for certain in this area of Indus-Mesopotamian relations.

Metal implements

Harappan metal types in Mesopotamian contexts are very rare. Mackay suggests that a flat copper blade without mid-rib from Kish is comparable to one from Mohenjo-daro (Marshall 1931: pl. 136.3; Mackay 1929: pl. 39.3.4, cited in Mackay 1931a: 463, fig. 1). Wheeler (1947: 80, citing Vats 1940: pl. 122.6), Figure 23, notes a personal communication from Donald McCown who suggests that there is an unpublished curved Harappan knife from Tepe Hissar. This object is not in the collections of the University

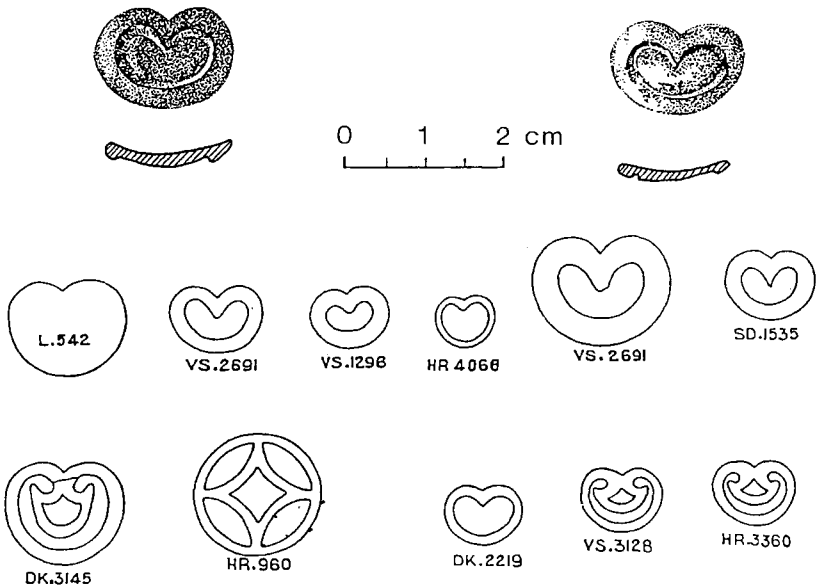


Figure 24 Heartshaped shell or bone inlay. Above, with scale—from Tell Asmar; below, no scale—from Mohenjo-daro (Marshall 1931: pl. 155.38-46)

Museum nor could it be located in the Thompson Collection at the American Museum of Natural History.

Spiral-headed pins have been found at Mohenjo-daro in the DK area at minus 18.4 feet (Mackay 1938: 539, col. II, pl. 100.4); at Chanhu-daro in the Jhukar phase (Mackay 1943: 195, pl. 68.9); at Manda in subperiod IA which has the Early Harappan/Mature Harappan mix (Joshi and Madhu Bala 1982: 187, pl. 16.2); and at Banawali in Mature Harappan context (Bisht 1982: pl. 10.25). Given the distribution of these pins both geographically and over time, it is not clear that they have any real value in an investigation of Indus/Mesopotamia contacts.

A copper trident is described in a preliminary report on the excavations at Mohenjo-daro (Anon. 1930-4: 70). This object does not seem to have been published in the final report. It may well be comparable to a trident from Hissar III (Schmidt 1933: pl. 120A).

There are bun-shaped copper ingots from Mohenjo-daro (Mackay 1938: 451, pl. 121.34 and 132.37f), Chanhu-daro (Mackay 1943: 188) and Mature Harappan Lothal which can be compared to an example from Susa (Rao 1985: 520f, pls 248A, 247A, B, fig. 118.4). I have not been able to document fully the ingot said to be from Susa, nor to ascertain its proposed date. There is also an ingot of this type at Ras al Qala'a, see below.

Material oddments

The following is a list of other materials which may contribute to our understanding of Indus/Mesopotamia contacts.

1. Two pieces of heart-shaped shell or bone inlay come from Tell Asmar (Frankfort 1933: 50), Figure 24, courtesy of the Oriental Institute, University of Chicago. These can be compared to pieces from Mohenjo-daro (Marshall 1931: pl. 155.38-46).
2. A cubical stone weight dating to the Ur III Period was found at Ur (Woolley 1974: 102, U.17673). It is described as: "Cube of yellow carnelian, like a die but with no numbers on the faces, 0.017 m., found 2.5 m. below the offset of the SW outer wall of Amar-Sin's NW mausoleum". Shereen Ratnagar (1981: 186) has studied this object in the Baghdad museum and found that it weighs 13.5 g., corresponding to the most frequently found Harappan weight and generally taken as the base ratio of one in that weight system.
3. The shell ladles from Mohenjo-daro (Marshall 1931: 156, figs 26-9) are exactly duplicated at both Kish and Ur (Mackay 1931a: 465).
4. A limestone tetrahedron from Tell al Ubaid (Hall and Woolley 1927: 211, T.O. 403) is very much like tetrahedrons from Mohenjo-daro (Marshall 1931: pl. 153.40f; Mackay 1931a: 464).
5. The "Greek cross" occurs in both regions. Note one on the bezel of a silver ring from Mohenjo-daro (Marshall 1931: pl. 148A.13; Mackay 1931a: fig. 5); it is paralleled at Ur on the shells of a gaming board (U 10557 from "Royal Grave" PG

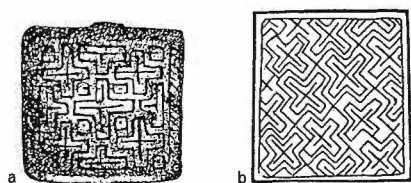


Figure 25 "Greek cross". Left—from Mohenjo-daro (Mackay 1931a: 464f); right—from Ur (from Woolley 1934: pl. 96)

789; Woolley 1934: pl. 96): see Figure 25. The Ur pieces also have swastikas filling the spaces within the cross (Mackay 1931a: 464f). 6. Well modelled panther heads occur at Mohenjo-daro (Marshall 1931: pl. 96.5f; Ardeleanu-Jansen 1987: 186, Abb. 154) and Ur (Woolley 1929: 16). The Indus examples are in terracotta while those from Ur are in silver, but both sets were intended to be mounted, as shown by the open, hollow backs (Mackay 1931a: 466).

7. Mackay (*ibid.*) also draws parallels between a type of "mask" from Mohenjo-daro, i.e. a human head with the horns of a bull, and similar metal examples from Ur.
8. Small pottery figures of doves with outstretched wings are common at Mohenjo-daro. Similar figurines have been found on Crete and at Tepe Musyan in Iran. Woolley also found one in "pre-flood" levels at Ur. Other doves, or chickens, this time with closed wings and sitting on a stand are also found at Mohenjo-daro (Marshall 1931: pl. 153.17f) and Kish (Mackay 1929: pl. 47.7; Mackay 1931: 466f).
9. The "endless knot" design found on copper tablets from Mohenjo-daro (Marshall 1931: pl. 117), Figure 26, is documented in Egypt in Thirteenth Dynasty context (Petrie 1925: pl. 8.128-30) and at Tell Amarna, as demonstrated by a painted stone now in the Ashmolean Museum (Mackay 1931a: 469). There is also an "endless knot" design on a copper knife or *parsu* from Rojdi (Possehl and Raval 1989: fig. 77), Figure 26.
10. The wheeled animals from Ur and Kish (Mackay 1929: pl. 46.3) are probably rams and are comparable to similar figurines from Mohenjo-daro (Marshall 1931: pl. 91.9f; Mackay 1931a: 470).

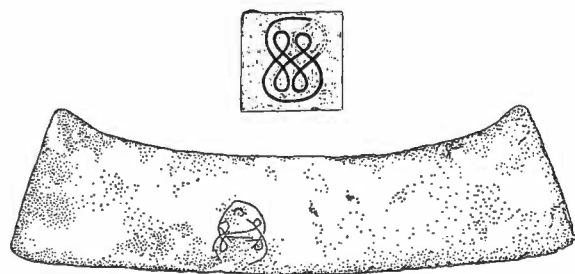


Figure 26 "Endless knot" design. Above—from Mohenjo-daro (Marshall 1931: pl. 117); below—from Rojdi (Possehl and Raval 1988: fig. 77)

This is a summary of the Harappan, or Harappan-like, materials that have been used to establish a material link between the Indus and Mesopotamia. There are other artifacts both in the Gulf and from Harappan sites which can be used to augment the material record of these contacts.

Harappan material culture in the Gulf

There is very little diversity in Harappan material culture in the Gulf and Oman. While Harappan ceramics, especially storage jars and dishes-on-stand, occur in quantity and testify to direct contact between ancient India, Dilmun and Magan, there has been little other pure Indus material found. This situation is likely to change, since so much good archaeology currently is being undertaken in the "Greater Gulf". In fact, it is not an exaggeration to say that much of the important archaeology on the Harappan civilization is now being done beyond its western frontiers. Thus, the situation is changing, with much unpublished material, and more which has received only the most preliminary kind of reporting. It is with this in mind, and with deference to those hard at work in the region, that the short summary of Harappan materials in the Gulf and Oman has been organized.

Ceramics and graffiti

Harappan ceramics have been found in some quantity in the region. At Ras al-Junayz two sherds with Harappan graffiti have been found along with characteristic Harappan fine red ware sherds (Tosi 1982 and personal communication). Considerable Harappan pottery is reported from Failaka Island as well as the Gulf generally (M. Tosi, K. Frifelt, personal communications) including Maysar and Hili 8, Period III (Cleuziou 1986: 147).

The "Kulli" mirror

Among the finds from the Barbar Temple on Bahrain is a copper/bronze mirror with a handle in the form of a human. It is illustrated by Glob (1954: 152, fig. 6) and has also been published by Nagaraja Rao (1969); this object, see Figure 27, resembles a mirror

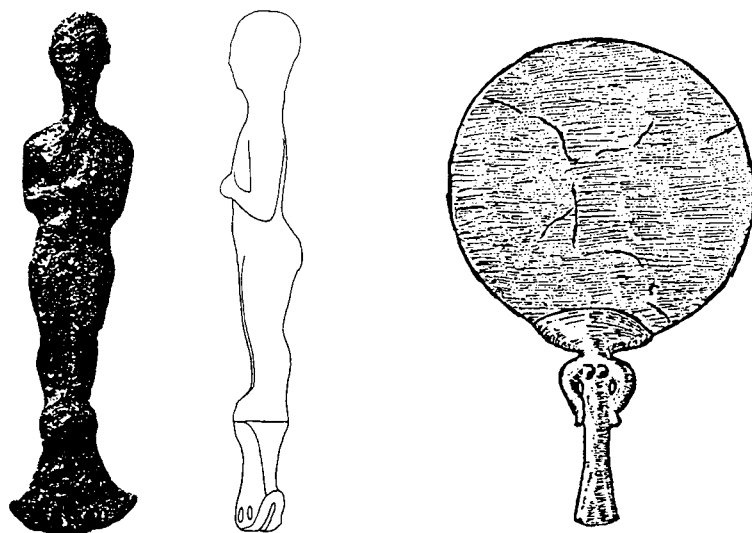


Figure 27 Left—bronze mirror handle from Bahrain; right—bronze mirror from Mehi (Nagaraja Rao 1969: 218)

from the Kulli site of Mehi in Baluchistan (Stein 1931: pl. 32.Mehi II.1.2.a; Possehl 1986: 48, Mehi II.1.2.a). These objects are similar, but the head of the figured handle in the Mehi example is actually the face of the mirror itself. With the Barbar piece the head of the figured handle is just below the face of the mirror. There is a second bronze mirror from Mehi. This object has no handle and could easily be of the type that would have fitted on the top of the Bahrain handle. A third mirror of this general type is documented at the mid-third millennium temple of Shushinak at Susa (Ratnagar 1981: 20, n. 10.5).

The Harappan system of weights

The Harappan system of weights has been found within the Gulf. Ratnagar (1991: 184f) has a very concise statement of the evidence:

“About 200 weights have been found at Mohenjo-daro and about 100 each at Harappa and Chanhudaro. Weights have also been found at several other Harappan sites. At Chanhudaro 22 examples were found in a stone-cutter’s house (Mackay 1943: 43), but otherwise at the major sites the weights were not concentrated in particular areas (Marshall 1931: 461-4; Vats 1940: 360).

“Detailed and exhaustive studies of the weights from Mohenjo-daro and Harappa having been carried out, the Harappan system is now clearly understood. The most frequently occurring weight has a mean value of 13.63 g. (Mackay 1943: 237); the other weights are either factors or multiples of it; thus taking the value of 13.63 g. as the ratio 1, we have the sequence 1/16, 1/8, 1/4, 1/2, 1, 2, 4, 10, 12.5, 20, 40, 100, 200, 400, 500 and 800.

“At Ras al Qala’a were found 7 stone weights, all except one having been clustered together with 12 Barbar seals in a building by the city gate. Two of the weights were cubical, one a half cube and the rest spherical with flattened top and bottom (Bibby 1970). The cubical and flattened spherical shapes are known at Harappan sites, where the latter are, however, comparatively rare: 12 at Mohenjo-daro (Mackay 1938: 607ff), 1 at Harappa (Vats 1940: 362f), about 5 at Chanhudaro (Mackay 1943: 236ff) and at least 5 at Lothal (Rao 1973: 122). Once the Barbar weights had been weighed, it became clear that they conformed to the Harappan system. Again taking 13.63 g. as the unit, the Barbar weights were the following multiples or fractions of it: 1/8, 1, 2, 1, 12.5 and 100 (Bibby 1970)...

“Even more interesting is the reference in a Larsa period text from Ur (Leemans 1960a: 38f) to the ‘Dilmun’ *mana*. This text indicates that approximately 13,100 Dilmun *mana* are equivalent to 611 *gin* 6 2/3 *mana* of the Ur standard. It has therefore been possible to calculate the Dilmun *mana* as approximately 1,371.5 to 1,376.8 g. (Bibby 1970). This figure corresponds exactly to the multiple of hundred in the Harappan system, of which value a weight also exists at Ras al Qala’a, as shown above.”

Another Harappan weight has been found at Shimal in Oman (Cleuziou 1986: 147).

The significance of the Harappan weight system prevailing in ancient Bahrain is not well understood. Bibby (1970) suggests that it was used because the Harappans were the earliest and/or the most important trading partners for the Dilmun merchants. Given the very early attestations for Dilmun in the archaic texts from Uruk, which can be dated to *ca.* 3200 BC (Nissen 1986: 336f), and early Mesopotamian presence in the Gulf (Frifelt 1970; 1975; 1976; 1979; 1986; During Caspers 1979; Piesinger 1983), it would seem unlikely that the Harappans preceded Mesopotamians in this area. A similar qualification would come to bear on this point if one takes the written evidence for economic activity into account. Economic intercourse with Magan and Mesopotamia itself far exceeds the attestations for Meluhha. Thus, to posit the latter as the most important trading partner one has to cross this formidable hurdle.

It should be assumed that there are many possible answers to this question. Maybe, for example, the Dilmun merchants did not like the weight systems of Mesopotamia and were attracted by the straightforward simplicity of the Harappan standard. Or, the Dilmun merchants took to the Harappan system because it was unknown, or largely so, in Mesopotamia and they wanted to “mask” their transactions with the Sumerians and Akkadians as much as possible. They did not want to use a system that made “translation” easy, so that they could make a few extra shekels on the averaging and hedging that takes place when moving between weight systems. In any event the presence of the Indus weight standard in Dilmun would seem to be historically significant and point to the fact that the Harappans were an important economic force there.

Seals

The significance of the growing corpus of stamp seals from the “Greater Gulf” is still an area of active, productive research. The classic study is by Gadd (1931) written prior to the notion of the “Persian Gulf” type seal. The type was more or less defined by Bibby (1958b; also see Wheeler 1958) and has been recently commented upon by Mitchell (1986) and Kjaerum (1980; 1986). Many of these round, button seals have Indus script (*e.g.* Gadd 1932: nos 2f, 16-18; Tosi 1987: 125, Abb. 99). The most frequent motif on the seals with Indus script is the unhumped bull with its head lowered to a manger.

Beads/gamesmen

There is one etched carnelian bead from Umm an-Nar datable to the late third millennium (Thorvildsen 1962: 208-19; Reade 1979: 11) and two more from grave eight at Hili North (Cleuziou 1986: 147). A single lingam-shaped gamesman with a very precise parallel at Mohenjo-daro comes from Barbar (Glob 1954: 152; Mackay 1938: pl. 140.12).

Raw materials

A bun-shaped ingot of copper was recovered from the Ras al Qala‘a City II (no. 517.RH, published in Ratnagar 1981: 91). The documentation of the Harappan examples of bun-shaped ingots has been given above. In addition, ivory, lapis lazuli and gold were

recovered from the Barbar Temple (Mortensen 1970). These are all raw materials which can, or might be, associated with Meluhha.

“Western” material in the Greater Indus Valley

“Persian Gulf” seals in the Indus valley

Six Persian Gulf seals have been found at Indus sites (Mackay 1931b: 375f; Mackay 1938: 343; Mackay 1943: 148).

1. Mohenjo-daro (Marshall 1931: pl. 110.309), see Collon, this volume, Figure 15o. Short horned bull, head lowered to a manger, six Indus signs.
2. Mohenjo-daro (Marshall 1931: pl. 112.383), see Collon, Figure 32c. Six animals in a pin-wheel, one sign visible, broken. This seal is comparable to another Persian Gulf type from Bahrain (Mortensen 1970: fig. 8).
3. Mohenjo-daro (Marshall 1931: pl. 114.478). Six Indus signs on a broken seal.
4. Mohenjo-daro (Mackay 1938: pl. 96.500), see Collon, Figure 15p. Short-horned bull, head lowered to a manger, three Indus signs.
5. Chanhudaro (Mackay 1943: 148, pl. 51.23), see Collon, Figure 15q. Unicorn below six Indus characters.
6. Lothal (Rao 1965: 37; 1985: pl. 161B-C), see Collon, Figure 29j. This object was a surface find at the site. “The material of which the Lothal seal is made is steatite of a light grey colour with a creamy surface. Its diameter is 2.25 cm and the thickness at the centre 1.2 cm. At the back is a perforated boss covering almost the entire surface and divided by triple lines between four circles with a central dot. On the face are two jumping goats or gazelle-like animals looking behind and flanking a double-headed dragon. Both in motif and shape this seal is entirely different from the normal square seals of the Indus Civilization and from the Sumerian cylinder seals. It bears no script of any kind” (Rao 1963: 96; pl. 15g-h).

Cylinder seals in the Indus

1. Mohenjo-daro (Mackay 1938: 344, pl. 84.78), see Collon, Figure 7a. Soft white stone “barber pole” motif. No writing.
2. Mohenjo-daro (Mackay 1938: 344, pl. 89.376 and D), see Collon, Figure 5d. Calcite seal with an “insect” and “bovid”. No writing.
3. Mohenjo-daro (Mackay 1938: 344f, pl. 96.488), see Collon, Figure 5a. Steatite seal with two quadrupeds, birds(?) and vegetation. No writing.
4. Kalibangan, Mature Harappan (Thapar 1975: 29), see Collon, Figure 7b. Seal with human and human/animal figures in a scene. No writing.
5. Sibri, equivalent to Mehrgarh VIII, ca. 2000 BC (Jarrige 1985b: 109). Dark grey steatite seal with a zebu and “lion” in a wooded scene. No writing.

6. Sibri, equivalent to Mehrgarh VIII, ca. 2000 BC (*ibid.*: 109, fig. 6). White steatite seal very similar to no. 5 above. No writing.

This list excludes the cylindrical ivory rods, which are not necessarily seals (Marshall 1931: pl. 114.529-33). It also omits the object in Mackay (1938: pl. 96.509), noted by During Caspers (1984: 365). This seal fragment was not included by Mackay in his discussion of Harappan cylinder seals (Mackay 1938: 344f), therefore there is reasonable doubt that it is actually a cylinder.

Weights

Mesopotamian type “barrel weights” have been found at Mohenjo-daro and Harappa.

1. Mohenjo-daro (Marshall 1931: 463, HR.1115). 14.091 g.
2. Mohenjo-daro (*ibid.*, VS 2905). 33.553 g.
3. Mohenjo-daro (*ibid.*, C.315). Badly chipped and therefore not weighed.
4. Mohenjo-daro (Mackay 1938: 403, DK 4486). 28.47 g.
5. Mohenjo-daro (*ibid.*, DK 11096). 55.9 g.
6. Mohenjo-daro (*ibid.*, DK 11232d). 51.424 g.
7. Mohenjo-daro (*ibid.*, DK 11232e). 40.402 g.
8. Mohenjo-daro (*ibid.*, DK 3485). 13.97 g.
9. Mohenjo-daro (*ibid.*, DK 5302). 96.476 g.
10. Harappa (Vats 1940: 362, no. 47). 61.3 g.
11. Harappa (*ibid.*, no. 48). 130.2 g.
12. Harappa (*ibid.*, no. 7597). 128.15 g.
13. Harappa (*ibid.*, no. B1480). 7.65 g.
14. Harappa (*ibid.*, no. A333). 80.65 g.
15. Harappa (*ibid.*, no no.). Unmarked, unfinished.
16. Harappa (*ibid.*, no. 12063). 37.5 g.
17. Harappa (*ibid.*, no. A347). 25.5 g.

Vats (1940: 361) notes that: “Eight complete and two fragmentary weights of this type have been found at Harappa”. It is therefore evident that two of the specimens (the fragments?) are missing from this list.

Metal objects

There are a few western metal types which have been found in Indus contexts. The toilet set of copper implements comprising an earscoop, piercer and tweezers from late levels at Harappa (Vats 1940: pl. 125.1) has a rather precise parallel at Ur (Woolley 1934: pl. 159b), Figure 28, and Kish, with eleven (or twelve?) reported sets (Mackay 1929: 169, pl. 43.1- 8). This set of implements seems to date to Early Dynastic III and to be quite at home in Mesopotamia.

Animal-headed pins have been found at Harappa, Area J, trench III (Vats 1940: 390, pl. 125.34, 36); Mohenjo-daro, DK area (Mackay 1938: II, pl. 100.3). Lamberg-Karlovsky (1972: 225) states:

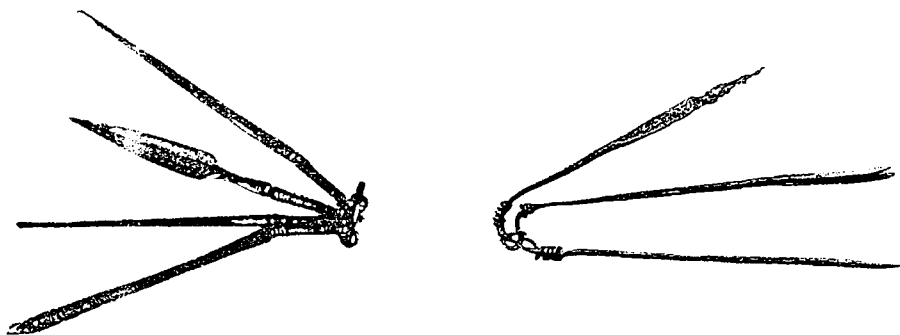


Figure 28 Toilet kits. Left—from Ur (Woolley 1934: pl. 159b); right—from Harappa (Vats 1940: pl. 125.1)

“Piggott (1948: 26-40) has argued that these pins were imported into the Indus Valley. The presence of this generalized type at Troy II, Alaca Huyuk (Grave L), Naram-Sin’s palace at Brak, a mid-second millennium tomb of Mari, Hissar II, IIIC, *et al.* indicated to Piggott the eastward migration of this type. Their presence in the Koban and Korca in thirteenth-ninth century contexts make them at best a questionable chronological marker. Piggott’s examples from Iran alone range from fourth to second millennium date... We dismiss them as evidence of trade, but see in their popularity throughout late third millennium Western Asia an indication of a common tradition in the manufacture of pins.”

The copper axe-adzes recovered from Mohenjo-daro some six feet below the surface (Mackay 1938: pl. 120.27) and another from Sibri (*ca.* 2000 BC) are comparable to other examples from Hissar (Schmidt 1937: pl. 52, H 2710, H 3247) and, farther afield, Early Minoan II and Troy II (Wheeler 1947: 80).

Sculpture

The stone bust of a male from the site of Dabar Kot (Stein 1929: pl. 16; During Caspers 1963; 1965) is compared to the head from the Early Dynastic Nintu Temple VI at Khafaje (Frankfort 1943; During Caspers 1965: 54). Other parallels are said to exist at Tell Asmar, Lagash and Al ‘Ubaid, and parallels with South Arabian materials are ruled out (*ibid.*: 55).

There are now four more pieces of sculpture which seem to fit with the Dabar Kot example. These have been discussed by George Dales (1985) in a brief review. They include the well known bust from Period IV at Mundigak (Casal 1961: 76, 255, pls 43f), a bust (*ca.* 3.5 cm tall) from the small site of Tepe Chah-i Torogh in Iranian Seistan, 15 km south of Shahr-i Sokhta (Jarrige and Tosi 1981: 131f; fig. 5), Figure 29, and two new

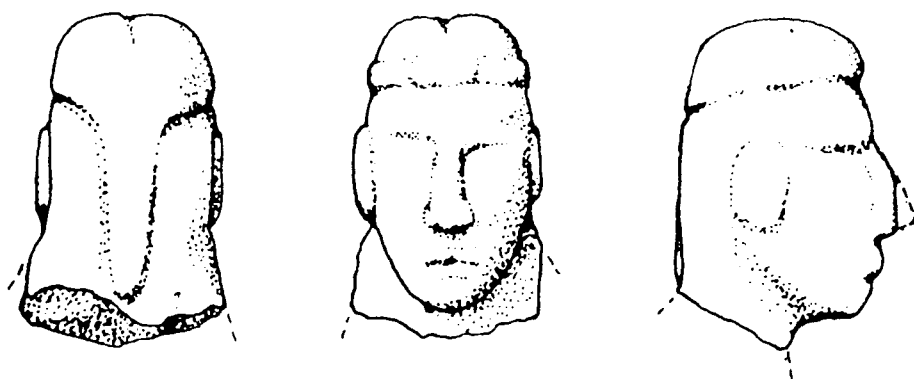


Figure 29 Stone head from Iranian Seistan (Jarrige and Tosi 1981)

pieces which Dales describes in his article. The first of these was in a private collection in southern Afghanistan when Dales drew and photographed it (Dales 1985: 219, pl. 1). The second is an unpublished head from Mohenjo-daro in coarse brown stone (*ibid.*: 223, pl. 2b). Excluding the new Mohenjo-daro piece, these objects share a number of features, such as the headband, the proportions of the face and the rendering of the eyes, which seems to link them together, and might include the Dabar Kot bust. The treatment of the headband is much like that used on the so-called “Priest King” from Mohenjo-daro, although that should not be used to argue a close stylistic affiliation among these pieces (*ibid.*: 220f; Wheeler 1968: 89, n. 2). It could indicate some reasonable geographic expanse for ancient codes of dress, however. Whether or not these five pieces of sculpture in the round are indicative of stylistic norms shared with greater Mesopotamia should be addressed. The author’s opinion is that such a comparison is out of line, but the reader can decide this issue independently.

Two terracotta figurines from Mehrgarh (Jarrige and Lechevallier 1979: 526) are remarkable for their baldness and the treatment of the eyebrow as a slit. There is an unusual quality to these pieces, which come from Period VII (*ca.* 2800-2500 BC) and could recall Near Eastern comparisons.

Finally, a terracotta head from Lothal with a square cut beard has been suggested to be the representation of a Mesopotamian (Rao 1973: pl. 22D). The piece is certainly not within the Indus norm, at least if compared to the limestone sculpture from Mohenjo-daro and the other busts just noted.

Mythological themes and other motifs

The well known Near Eastern “contest scene” between man and animal is also represented in the Indus. This has been extensively reviewed by Asko Parpola (1984; also

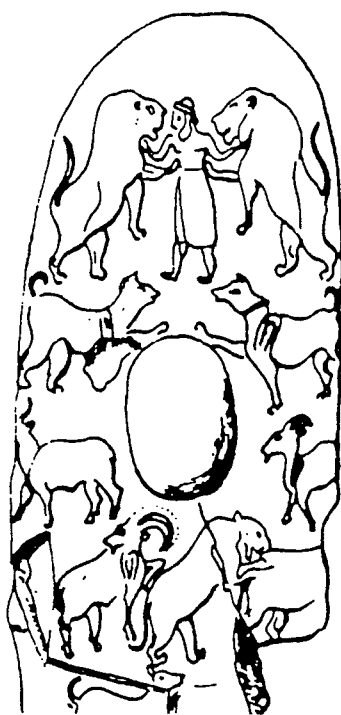


Figure 30 Above—The Gebel el 'Arak knife handle
Below—Mesopotamian contest scene (Amiet
1980: pl.71.947)

see Mackay 1938: 337) in a very well illustrated paper. The Indus motif generally involves a human in combat with two tigers and is found on the stamp seals characteristic of Harappan culture, see Collon, this volume, Figure 7g). The motif is thought to be one characteristic of the Near East, Figure 30. "A Harappan parallel for the bull-man 'Enkidu' was seen by Sir John Marshall (1931: 67, 76) in a seal from Mohenjo-daro, where a similar creature seems to attack a horned tiger. But this persisting comparison cannot be correct, as has been pointed out by Heinz Mode (1959: 64), for prominent breasts clearly indicate the female sex of this human, semi-bovine being" (Parpola 1984: 178). Parpola goes on to investigate this theme and finds a better parallel between the iconography of Proto-Elamite seals from Susa (Amiet 1961: 574f) and a triangular prism sealing from Harappa showing the "bull-man" (Vats 1940: pl. 93.305), see Collon, Figure 7h.

Further comparisons can be made between Proto-Elamite glyptic portrayals of the "lotus" (Legrain 1921: 62-254) and painted designs on Early Harappan ceramics at Kalibangan (Anon. 1962-3: 24), dating to *ca.* 3000-2500 BC. The same motif occurs at Mundigak IV (Casal 1961: fig. 102.485) and Kulli, both of which would be contemporary with the Mature Harappan (Possehl 1986: 31, Kulli V.ix.3), Figure 31.

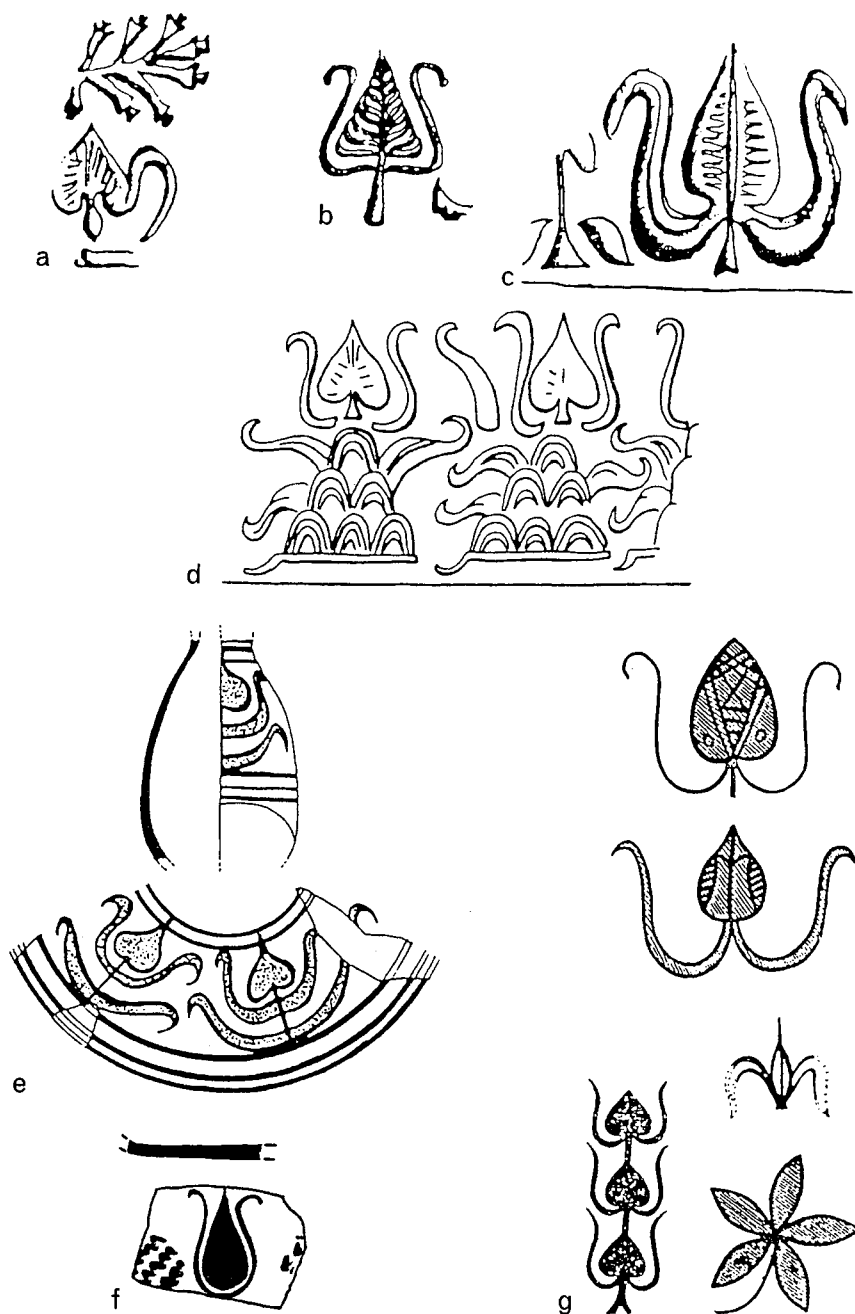


Figure 31 Similarities in the "sacred tree" motif: a-d—Proto-Elamite glyptics (a-c—Legrain 1921: 62-654; d—Amiet 1980: no. 497); e—Mundigak IV.3 (Casal 1961: fig. 102.485); f—Kulli (V.ix.3); g—Early Harappan Kalibangan (Sankalia 1974: 346, fig. 88d.A, H-L)

The material record of contact: a summary

There is an uneven quality to the material record of Harappan/Mesopotamian contacts. The Mesopotamian archaeological record is far richer in terms of documenting this phenomenon than is the Indus. While there are good examples of Harappan script in the west, the Indus Valley has yet to produce a convincing example of cuneiform script (but see Fabri 1937). A few of the objects are convincing imports. The Harappan “unicorn” seal impression from Tell Umma (Scheil 1925; Tosi 1987: 123, Abb. 95f) is a good example of this type. But many other things are more debatable: the “cushion” seals from Tell Brak, Tepe Sialk and Harappa for example. Some of the material is even derivative, not quite Mesopotamian nor Harappan. In the end it is fair to say that there is convincing evidence for contact.

Perhaps the best way to illustrate this as a convincing archaeological fact is to contrast the time period under consideration here, *ca.* 2600-1800 BC, with the periods on either end of it. Prior to 2600 BC and for the time following 1800 BC, including virtually the entire second millennium, the record of Indus/Mesopotamian contact is not strong or weak, it is non-existent. Thus, the archaeological record that is available for this approximately 800 years stands out as a definite contrast to other periods. The fact that there is any archaeological record at all documenting trade and commerce between these two regions is an important consideration, and one which may be our best tell-tale to the scope of the contacts.

Ancient Turan

It would be inappropriate to fail to take notice of the fact that many of the same products that found their way into the “Dilmun Trade” are a part of a more northern overland trade connection that links the Indus with eastern Iran, Seistan, Afghanistan and Central Asia. Sites like Shahdad (Hakimi 1972; Amiet 1974), Shahr-i Sokhta (Tucci 1977), Sibri (Jarrige 1985a, b), the Dashli-Sapalli complex (Gupta 1979: II, 194-204), and Altyn Depe (Masson 1981; *in press*) all shared with the Indus and Mesopotamia a role in this ancient commerce in luxury goods. A complete review of this role, for what has been termed “Ancient Turan”, is well beyond the scope of this paper. Something more will be said of this material in relation to the “Third Millennium Middle Asian Interaction Sphere” at the conclusion of this presentation.

Much of the trade and commerce suggested by the Mesopotamian texts, and the archaeological record, seems to have moved through the Gulf. Some consideration of Harappan maritime interests is therefore appropriate.

Harappan maritime interests

Harappan boats

There are four representations of Harappan boats, three from Mohenjo-daro, Figure 32, and one from Lothal, Figure 33.

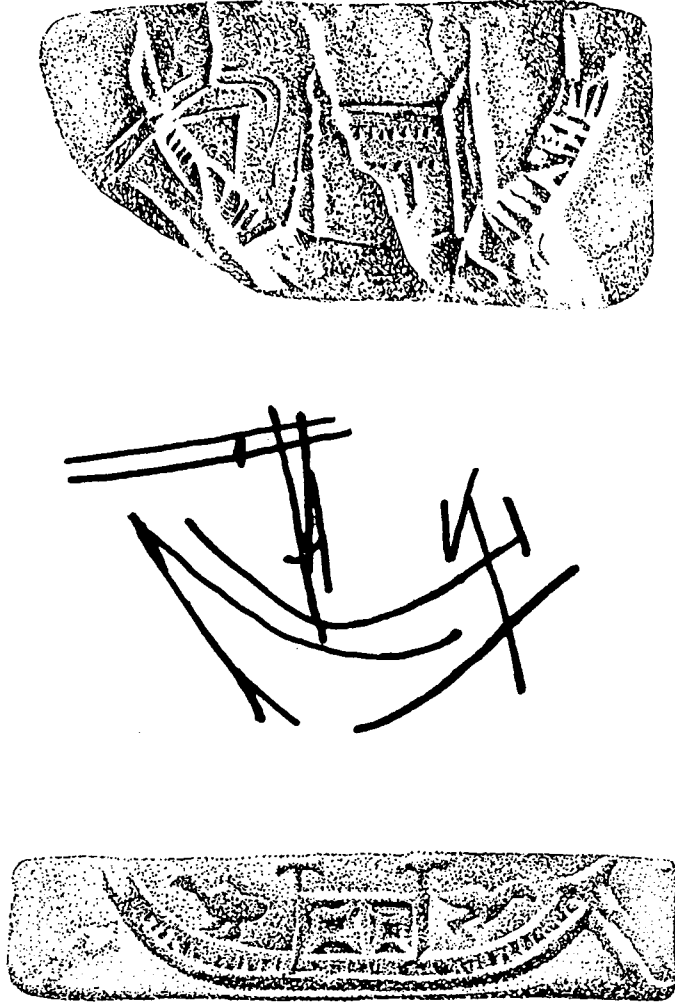


Figure 32 Boats from Mohenjo-daro (from top to bottom, Mackay 1938: pl 89a; pl. 69.4; Dales 1968b: 39)

1. Mohenjo-daro (Mackay 1938: pl. 89A). This is a seal with a boat engraving.
2. Mohenjo-daro (*ibid.*: pl. 69.4). Graffiti on pottery representing a boat.
3. Mohenjo-daro (Dales 1968b: 39). A three-sided sealing with a boat on one side.
4. Lothal (Rao 1985: 505, pls 220, 223A). This is a terracotta boat model from the Mature Harappan.

Mackay (1934: 422) has described the first two representations of boats found at Mohenjo-daro in the following way:

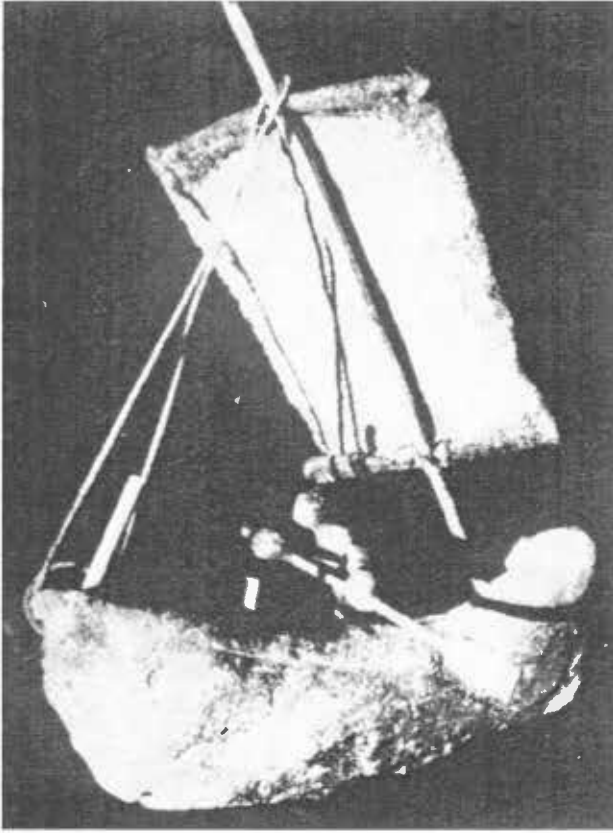


Figure 33 Boat from Lothal (Rao 1985: 505, pls 220, 223A)

“We have, however, found two representations of boats. One is roughly scratched on a potsherd and apparently has two yards on its masts. The other is carved on a seal and the bindings of its hull suggest that this boat was made of bundles of reeds, as were so many contemporary craft of ancient Egypt. It is mastless, which perhaps indicates that it is a river boat. The one, if not two, uprights at either end of the cabin carry flags or emblems, and a seated steersman holds a pair of oar-like rudders, as on the modern Indus craft. This vessel, it is interesting to note, is singularly like the one portrayed on the well

known Gebel-el Arak ivory knife handle, which, though found in Egypt, is thought to have been an importation, possibly from Elam. Of these boats the one with the mast could have been used for sea travel.”

The third Mohenjo-daro boat is also small and mastless. It too looks very much like a river craft. The Lothal model looks more like a sailing dinghy than a ship and would hardly have been useful on the open sea.

Maritime activities

The Harappan's employment of maritime resources is documented by their extensive use of shell for bangles, ladles, inlay and the like (Dales and Kenoyer 1977; Hegde, Bhan and Sonawane 1984). The Harappan levels of the site of Balakot, just removed from Sonmiani Bay in Southern Baluchistan, also revealed a surprising and unique dependence on fish for subsistence. Meadow comments (1979: 297):

“It is clear from the field tabulations, however, that fish contributed significantly to the diet of the Harappan inhabitants of the site. As with molluscs, any

attempt to quantify this contribution and to evaluate it in relation to the mammal component generally requires one to make a large number of often shaky assumptions. The fact that one species of shell (*Terebralia palustris*) and one species of fish (*Pomadasys hasta*) seem to dominate the remains of their respective classes may, in the final analysis, make the task simpler. Some initial considerations, too imprecise to be reported here in detail, suggest that marine resources could have contributed up to about half of the dietary intake from the faunal sources, with most of this coming from fish.”

The grub the Harappans were eating (*P. hasta*) is a fish that inhabits lagoons and sandy bottoms, at times in considerable quantity. Today it is caught with gill nets in Sonmiani Bay. Thus, Balakot does not provide us with evidence for Harappan deep sea fishing, but it gives us indications of their familiarity with the ocean.

At Ras al-Junayz in Oman there is evidence for Harappan sailors. Tosi and Cleuziou (personal communication) have reported significant quantities of Harappan pottery at the site, including a sherd with Harappan writing (Tosi 1982), Figure 34. The Harappan wares are mixed with indigenous ceramics. Among their finds at this maritime way-station are pieces of bitumen which they interpret as caulking for ships. We can be sure that there is much more to be learned from this site, but the initial information is very promising and important.



Figure 34 Harappan graffito from Ras al-Junayz (Tosi 1982: fig. 72)

Harappan ports

There are several Harappan coastal settlements which have been proposed to have been ports: Sutkagen-dor, Sotka-koh, Balakot, for example (Dales 1962a, b). Lothal is perhaps the best known of the Harappan “ports” (Rao 1965; 1972; 1979; 1985). There is also some interesting and promising underwater archaeology being undertaken in the modern port of Dwarka in Gujarat where Harappan materials have come to light (Rao 1987a, b). There is very little, if any, direct evidence that any of these settlements functioned as ports, in a formal way. The “port” of Sutkagen-dor is located a full thirty miles north of the present Arabian Sea coast. Also, I am in complete agreement with Leshink (1968) that the so-called “dockyard” at Lothal is a tank (Possehl 1980: 71f). Moreover, the location of this site, and of the tank adjacent to it, is simply not reasonable for a maritime settlement.

Some of these comments do rest on an assumption, on our implicit expectations of what a Harappan port might look like as an archaeological site. If we are expecting

massive quays, warehouses, broad roads along with an abundance of trade goods “detritus”, including the remains of their wrappings, sealings and containers, it can safely be said that a Harappan port has not been found. The problem with this notion is obvious: it is reasonable for us to question the likelihood that the Harappans had their “Caesaria”. In fact, much of the modern coastal trade between India, Pakistan and the Gulf takes place in craft operating from small scale ports which have little if any material infrastructure. The southern coast of Saurashtra is dotted with such settlements, along with other more formal ports like Veraval. In 1831 the British archaeological explorer Charles Masson was denied landing privileges at Karachi when he returned from a trip to Persia and Iraq via the Gulf. He landed instead at Sonmiani Bay, not far from Balakot (Whitterage 1986: 48). As already noted, the “Harappan” settlement at Ras al Junayz comes to mind as a very likely ancient example of a small-scale port. Thus, almost any small Harappan settlement on or near the coast could have been involved in the Bronze Age maritime trade and there is no need for us to invent elaborate, formal port facilities.

On the location of Meluhha

The equating of the Harappan civilization with the Mesopotamian land of Meluhha rests on the data which have just been reviewed. In the end, ancient India emerges as the most reasonable place for us to select. It should be emphasized that the evidence is only reasonable, not necessarily compelling.

The case is strong enough, however, for some thought to be given to Harappan interests in the west, especially in the Gulf, and to this early experiment in international trade.

Harappan interests in the Gulf and Mesopotamia

In a book reviewing the so-called Kulli culture of Baluchistan I proposed two things. First, the Kulli material represents a highland aspect of the Mature, Urban Harappan (Possehl 1986: 60f). Second, the achievement of urbanization on the Indus plains and in the Kulli region of Waziristan was one which can be characterized as a short period of very rapid culture change during which virtually all of the distinctive urban features of this civilization were originated (Possehl 1986: 94-9). The time for this transition was suggested to have been in the vicinity of 2700-2500 BC, with a duration of 150 to 200 years (Possehl 1986: 98).

A chronology for the beginnings of the Harappan civilization

A recent article by Jim Shaffer and Diane Lichtenstein (1989) points out that recent analysis of radiocarbon dates (Possehl and Rissman 1992) supports the notion of a short period of culture change leading to Harappan urbanization. In fact, they propose that this period was no more than about 100 years and that it focuses on the century between 2600 and 2500 BC. That this time was a period of some disruption is suggested by the fact that

some Early Harappan (Mughal 1970) or “Kot Dijian” sites were abandoned and then reoccupied by the Harappans (*e.g.* Balakot, Kalibangan). There are also many Harappan settlements that were built on virgin soil (*e.g.* Chanhudaro, Judeirjo-daro, Allahdino, Surkotada, Lothal). The burnt levels separating the Early Harappan from the Mature levels at Nausharo (Jarrige 1987) and possibly Kot Diji (Khan 1964) would also be congruent with this proposition.

This “fashioning” of the Harappan civilization over a period of a century or so took place on a cultural base which was minimally differentiated. That is, the Early Harappan, which immediately precedes the Mature, Urban phase of the Harappan cultural tradition, is not an archaeological assemblage which seems to harken an urban form. In that sense it is not at all like the Uruk period in Mesopotamia within which the seeds of full urbanization can be found. A reasonably full description of the Early Harappan in these terms is available elsewhere (Possehl 1986: 94-7), allowing this very brief recapitulation.

A comparison of the Early Harappan with the Mature, Urban phase

When comparing the Early Harappan with the Urban phase it is apparent that:

1. The Early Harappan has a settlement grid that is minimally differentiated. This is a contrast to the Mature Harappan with a three-tier settlement system.
2. There is little public architecture in the Early Harappan. This is not the case for the Mature phase.
3. Inferences concerning social differentiation during the Early Harappan, as difficult as they may be to handle methodologically, do not give us an image of a class or “proto-class” society. An examination of graves, house types, levels of wealth, signs of distant trade all lead to this conclusion. But during the Mature Harappan there are several lines of evidence that point to reasonably marked social differentiation.
4. There is no “proto-Indus script” during either the Early or Mature Harappan. The script and various metrical systems (*e.g.* weights) appear suddenly, without precursors, during the Urban Harappan.
5. While we are getting more of a sense of the Urban phase cultural mosaic (Thomas and Allchin 1986; Shaffer and Lichtenstein 1989; Possehl and Raval 1989) there is much more of a sense of disparity and cultural diversity during the Early Harappan. This greater sense of unity during the Mature phase must ultimately be attributed to a core of complex, distinctively urban forms of integration: something not anticipated in pre-urban times.

The chronology of Meluhha and the rise of Indus urbanization

It is evident that the “step” in the pace of culture change in the Greater Indus Valley is coincident with the beginnings of Mesopotamian trade with Meluhha, and the general growth of maritime trade in the Gulf. I have drawn attention to this fact elsewhere

(Possehl 1986: 96-9) where it was suggested that trade and its cultural implications offer us a convenient mechanism for understanding this astounding paroxysm of change.

Much more research needs to be undertaken to substantiate this case. It is not yet a theory nor has a monocausal argument been presented (Possehl 1986: 102f). It is the case, however, that there are many historical and ethnographic examples of similar happenings, *e.g.* the Northwest Coast of America in the first half of the nineteenth century, West Africa during the slave trade (see Adams 1974 and Possehl 1986: 99-103) where newly introduced patterns of trade have provided not only a new, robust economic base but the motivation for: new patterns of ownership; new patterns of raw material extraction, processing and marketing; a new impetus for craft and career specialization; increased social distance defined in terms of both wealth and power; and new motivations and capabilities for population agglomeration (see Possehl 1986: 99-103 for an expansion of this argument).

If this was the case, if the Harappan civilization was this deeply involved in this early maritime trade, then their interests in the Gulf would have been very profound indeed. The economics of this trade would then emerge as one of the fundamentals of the Harappan economy as a whole. I am not proposing that this was the case, but the coincidence in time presents us with the proper setting and historical and ethnographic analogy for trade, leading us to see the possibilities for understanding the sudden emergence of the Indus civilization within this context.

It can be added that if trade “turned on” the Indus civilization it could also be used to understand the eclipse of the ancient cities of the Indus. That too, is coincident in time with changes in the patterns of Gulf trade during the early second millennium.

Why the Mesopotamians may have started trading with Meluhha

The third millennium maritime trade in the Gulf and Arabian Sea has an event-like quality about it, especially the reaching out to ancient India. Elsewhere it has been suggested that this happened for a reason (Possehl 1986: 93-104). By Early Dynastic III times we know that Mesopotamian society was a complex, hierarchical system with various elite elements vying for wealth, power and authority. The two principal contending “parties” in this competition were the “palace” and the “temple”. Both texts and the archaeological record inform us that this rivalry was intense and politicized, it also involved exotic materials that were used by the political and religious elites as conspicuous displays of privilege and access. Some of these products also were used to maintain the elaborate Sumerian cult centres and their associated workshops. The principal materials in question are: copper, tin, bronze, silver, gold, lapis lazuli, carnelian, shell, ivory and various kinds of wood. By 2600 BC the cities of Mesopotamia were places of high demand for these products, things that are not a part of the riverine landscape of the Tigris/Euphrates valley, but are found in foreign countries associated with the Dilmun trade.

Many of the products in question are also found in the mountains of Iran. Prior to the growth of the maritime trade in the Gulf and Arabian Sea the Mesopotamians seem

to have used the overland routes and centres to the east as their access to such materials. But the deep-seated enmity between Mesopotamia and the Plateau was, or seems to have been, a serious barrier to acquiring these goods in quantity. It would always be possible to gain some of them by warfare, raid, trade and the like, but the burgeoning demand at the end of the Early Dynastic and on into succeeding periods simply outstripped these difficult, expensive methods of acquisition. There is also some evidence that these products were intimate parts of ancient Iranian systems of exchange and therefore were not materials that were traded in objective, commercial economic contexts (Possehl 1986: 73-88).

From the Mesopotamian perspective the situation can be hypothesized to have been one which was ripe for radical economic change with intense demand for products fuelled by fiercely competitive, powerful classes locked in a struggle for an entire society and way of life. This is a social and historical context within which creative thought and innovative ways of going about doing business are rewarded and may therefore succeed.

My hypothesis is that one of the new ideas to emerge from this situation was a significant growth and extension of the Gulf sea trade. This came to involve not only Dilmun but Magan and Meluhha as well, and it moved from the protected waters of the Gulf into the Arabian sea, possibly even the entire Indian Ocean (Reade 1986: 330f). The reorganization of the trade was developed as a kind of “end-run” around the southern edge of the Iranian plateau which ultimately linked the Mesopotamian economy with foreign lands that could better serve the scale of demand there.

Perhaps even more interesting than the Harappan participation in the third millennium Gulf trade is the sense of inter-regional integration that is a part of western and southern Asia during this time. The Harappans were part of a new and much larger world than they had known before the rise of urbanization in the Greater Indus Valley and Baluchistan. This new “interaction sphere” was a unique configuration for its time, and its scope and importance has only recently become apparent.

A great lost corridor of mankind

There is growing evidence that the maritime trade in the Gulf that eventually linked ancient India to Mesopotamia has larger, as yet poorly charted dimensions. In 1952 Carl O. Sauer suggested that the coastal route connecting the east coast of Africa through the eastern coast of Arabia to the southern coast of Asia “... may be a great lost corridor of mankind” (1952: 36). He was looking at the early dispersal of domesticated plants that were moved out of Africa into the economies of Arabia and south Asia at the time. Recent advances in Arabian archaeology, very nicely summarized by Maurizio Tosi (1986a), are beginning to give archaeologists good reason to return to Sauer’s observation. Of particular importance to this revitalization is the evidence that has been accumulated for the spread of certain millets out of the Ethiopian area and into Asian subsistence economies. Perhaps the most important of these is *Sorghum bicolor* which has been documented at a number of Indian and Pakistani sites within the first and second

millennia (Possehl 1986; Weber 1990; Weber and Vishnu-Mittre 1991). Even more revealing is the presence of *Sorghum bicolor* in layer four (ca. 4800 BC; Nisbet 1985: 417) at the site of RH5 at Qurm in Oman. Work on the material from RH5 is still in progress, but the place is basically a cemetery and an aceramic shell midden inhabited by peoples exploiting both maritime and terrestrial products (Tosi 1986a: 476f). By the beginnings of the third millennium BC this millet is seemingly well entrenched in the regional economy at places like Hili 8 (Cleuziou 1982).

The significance of these finds in terms of the Dilmun Trade is that they may be documenting the precursors for the growth of maritime activity in the mid-third millennium that has been the focus of this presentation. It may even be that trade along the coast of eastern Arabia was a significant part of a larger, yet to be seen, configuration of the Dilmun Trade which ultimately linked Arabia and "Middle Asia" in some complex, yet to be defined way. But strongest of all is the sense that there is much work yet to be done to clarify this and other issues.

There is one other hint of extended dimensions to the second and third millennia maritime trade that can be noted. In 1982 Georgio Buccellati announced the presence of cloves at the site of Terqa on the central Euphrates. The stratigraphic context for the cloves and the pot in which they were found, would indicate a date of ca. 1700-1600 BC (Reade 1986: 330; Tubb 1980). Cloves, while they are cultivated elsewhere today, are only native to the Moluccas, an island group of Indonesia some 5,000 miles to the east of the Straits of Hormuz. The geographical expanse implied by this find, if it proves to be correct, and no one has advanced serious reasons to doubt it yet, would leave open a great deal of room for new hypothesis formulation concerning the true scope of the maritime activity that is best attested in the Gulf through the written texts of Sumer and Akkad.

The third millennium Middle Asian interaction sphere

Whatever else may come to light, and unexpected, even startling discoveries can be anticipated, it is now apparent that the centuries between about 2600 and 2000 BC were a time during which new, unique economic and political configurations were fashioned in a region of the world we can refer to as Middle Asia: the regions between the Indus and the Euphrates, bounded on the north by the deserts of Central Asia and on the south by the Arabian Gulf (Lamberg-Karlovsky 1982; 1984; 1986; Tosi 1986b). The presence of the Intercultural Style is indicative that a shared set of beliefs, not necessarily a coherent religion, was a part of this cultural configuration. The fact that the Intercultural Style is documented at the earliest stages of the interaction sphere may be taken as an indication that it played a significant role in its growth and maturation process.

It was during the 1920s and 1930s, with the excavations of the Royal Graves at Ur, and other Mesopotamian sites like Tell Asmar, Kish and Susa, that the full richness of

Sumerian and Akkadian civilization came to light. During these same decades, but some 1,500 miles to the east, archaeologists unearthed the remains of the contemporary Harappan civilization, a new and totally unexpected civilization of the ancient Indian Bronze Age. It was immediately apparent that the Harappans and their Sumerian and Akkadian contemporaries had been in contact with one another since Harappan artifacts were found at a number of Mesopotamian sites.

Other archaeological work in the Gulf, especially on Bahrain and on the Iranian plateau at sites like Tepe Sialk and Tepe Hissar, uncovered important new material which was clearly a part of the life of the third millennium in Middle Asia. For example, there were etched carnelian beads and quantities of lapis lazuli at Hissar and Proto-Elamite tablets at Sialk, which seemed to be informing archaeologists of something, but the message was not at all clear.

Renewed archaeological work throughout Middle Asia following the hiatus caused by World War II has done much to clarify the early history of this region. What has emerged is a complex mosaic of urban centres and regional polities all seemingly linked by an economic vitality that is both new and impressive.

This new image of ancient Middle Asia emerged through excavations undertaken by scholars from a number of nations. The explication of the ancient lands of Dilmun and Magan, now associated with the island of Bahrain and Oman, brought to light important actors in this complex interaction sphere. Additional excavation in Iran at Tepe Yahya, Shahr-i Sokhta, the necropolis of Shahdad and once again at Hissar, as well as at Mundigak on the Helmund river in Afghanistan, have added significantly to our knowledge of the third millennium on the Iranian plateau. The understanding of these recent discoveries is incomplete, to be sure, and there is a great deal of digging yet to be done; however, there is now a strong sense of unusual economic and political activity in this region, including nascent urban organization, and that complements the earlier evidence from Sialk, Hissar and other sites.

In the Greater Indus Valley to the south and east, excavations at Kot Diji, Sarai Khola, Rehman Dheri, Kalibangan, Banawali, Rangpur, Lothal, and a host of other sites, have added immensely to our understanding of the Harappan civilization as well. This urban form probably remains, in terms of its scale, the most enigmatic of these Bronze Age peoples, but new interpretations of this civilization are beginning to clarify some issues. The archaeological work at Mehrgarh, and other surrounding sites at the base of the Bolan Pass, like Nausharo and Sibri, is a very positive case in point. There are numerous and obvious parallels in material culture among these sites which clearly link them with the north of Middle Asia: the plain of northern Afghanistan (also inhabited by the Harappans at Shortugai) and Turkmenia.

The excavation of Altyn Depe and the discovery of the Turkmenian Bronze Age civilization brought an important sense of geographic closure to the ancient Middle Asian

interaction sphere. The urbanization of Turkmenia can now be seen as one more example of the sociocultural vitality of this region in antiquity.

Beginning at about 2600 BC there was, for reasons far from known, a grand conjunction of trade and probably power, certainly of “interconnectedness”, which ultimately linked Mesopotamia, Dilmun, Magan and the Indus overland across Iran and through the Arabian Gulf by sea. It is also apparent that Central Asia was linked west and east via Iranian routes to Mesopotamia and the Indus, as well as south into Seistan and the Helmund. Much remains to be understood of this conjunction, how it came to be, what sustained it, and why, beginning at about 2200 BC, the interaction sphere seems to have begun a process of cultural disintegration. But the regional polities, Mesopotamia, Dilmun, Magan as well as the Indus, Helmund and Turkmenian civilizations, have been identified. While there is still room for other “chips to the mosaic” to be added, most of the principal centres seem to have been exposed.

More challenging, perhaps, than issues of the temporal and spatial relationships between urban centres and regions, is the task of trying to assess what this conjunction means within a larger historical and anthropological frame of reference. In terms of geographic scale and cultural diversity the Middle Asian Interaction Sphere was a wholly new kind of human experience. It was on the cutting edge of human experience and cultural innovation, and all such experiments in human organization deserve our attention.

Acknowledgements

An important part of the research on this paper has involved an investigation of the cuneiform sources on Meluhha. I do not read any of the languages rendered in this script and have had to rely on translations and the good will and advice of my colleagues, especially Dr Herman Behrens, in the Babylonian Section of The University Museum. The fact that the Assyriologists I worked with were helpful and patient should not be taken as an indication that they necessarily agree with, or approve of, my historiography or conclusions.

Addendum

A significant amount of additional work has been done in Oman and the Arabian Gulf since this paper was submitted for publication. The most important work has taken place at Ras al Hadd and Ras al Junayz, directed by Maurizio Tosi, Serge Cleuziou and Julian Reade. The excavations at Tell Abrak, directed by Daniel Potts, have also yielded materials that relate to the trade between Meluhha and Mesopotamia. Two general surveys of this problem have also appeared. The first is a two-volume work on Gulf archaeology by Potts (1990), the second is a more focused review of the material evidence for Indus/Mesopotamian relations in the Gulf (Edens 1993). References have been incorporated below, with apologies to the many workers who have contributed to our understanding of the “Meluhha Problem” whose work has not been included.

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Mesopotamia and the Indus: the Evidence of the Seals

by DOMINIQUE COLLON

Asko Parpola has drawn attention to the striking parallels between the iconography of Proto-Elamite seals in the earlier part of the third millennium BC and the motifs which later appear on the seals and pottery of the Harappan culture (Parpola 1981). The distribution of sites where Proto-Elamite artifacts and tablets have been found is evidence for an overland trade route but does not preclude the use of a maritime route as well.

In this context it is perhaps also worth noting that the closest parallels for a very fine foreign stamp seal at Mohenjo-Daro, which depicts two horned quadrupeds *tête bêche* with their heads turned back, are a group of cylinder seals and one lion-shaped stamp seal centred on the Diyala and probably also dating to the beginning of the third millennium BC (Figure 1). During Caspers (1985) has drawn attention to the possible origins of the so-called Indus "unicorn" (e.g. Figure 2) in Mesopotamian or Proto-Elamite iconography, where there existed a convention of depicting only one horn of an animal in contrast to the Indus convention where two horns are otherwise invariably depicted; the patterning of the body is also a feature of Proto-Elamite seals. Again an overland and a maritime route are both possible but an unprovenanced seal in the Cherkasky collection (Figure 3), which probably originated in the Murghab (Margiana)

Illustrations

With the exception of Figures 5-9, 12, and 32-33, the left-to-right arrangement of the drawings corresponds roughly to a west-east distribution, with the drawings on the left of objects from Anatolia, Syria or Mesopotamia, drawings on the right of objects from the Indus, and drawings in the middle of objects from Iran, the Gulf or Central Asia. Wherever possible or relevant the drawings are those of the impression of the object; they are not to scale and are mostly taken from photographs with all the limitations in accuracy this implies. However, Figures 4a, 8d, 11a, 12, 14a, 15a-d, f, g, hh, 17b, 22a and 26b, c, e are drawn from actual impressions, with reference to the object where possible.

region of western Central Asia at the beginning of the second millennium BC, shows similar heart-shaped patterning of the animal's shoulder and a plant which could well have shared a common prototype with the "cult-object" that invariably stands before the "unicorn". There are, however, considerable and perplexing chronological gaps between the Proto-Elamite, Harappan and Murghab examples.

An interesting link between Ur and Shahr-i Sokhta in the early third millennium BC is provided by very fine and distinctive seal impressions from the former site (on sealings round the neck of a jar, with string impressions) and a fragmentary cylinder seal from the latter which bear designs which are virtually identical and are not to be found on the Ninevite 5 sealings which they outwardly resemble, but on a much smaller scale (Figure 4).

The adoption of the cylinder seal shape at Harappan sites in the second half of the second millennium BC, argues for much more direct links with Mesopotamia. Sometimes the designs are local (Figure 5) but at others they are of unknown inspiration (Figure

EARLY THIRD MILLENNIUM BC: MESOPOTAMIAN INFLUENCE ON CENTRAL ASIA AND THE INDUS

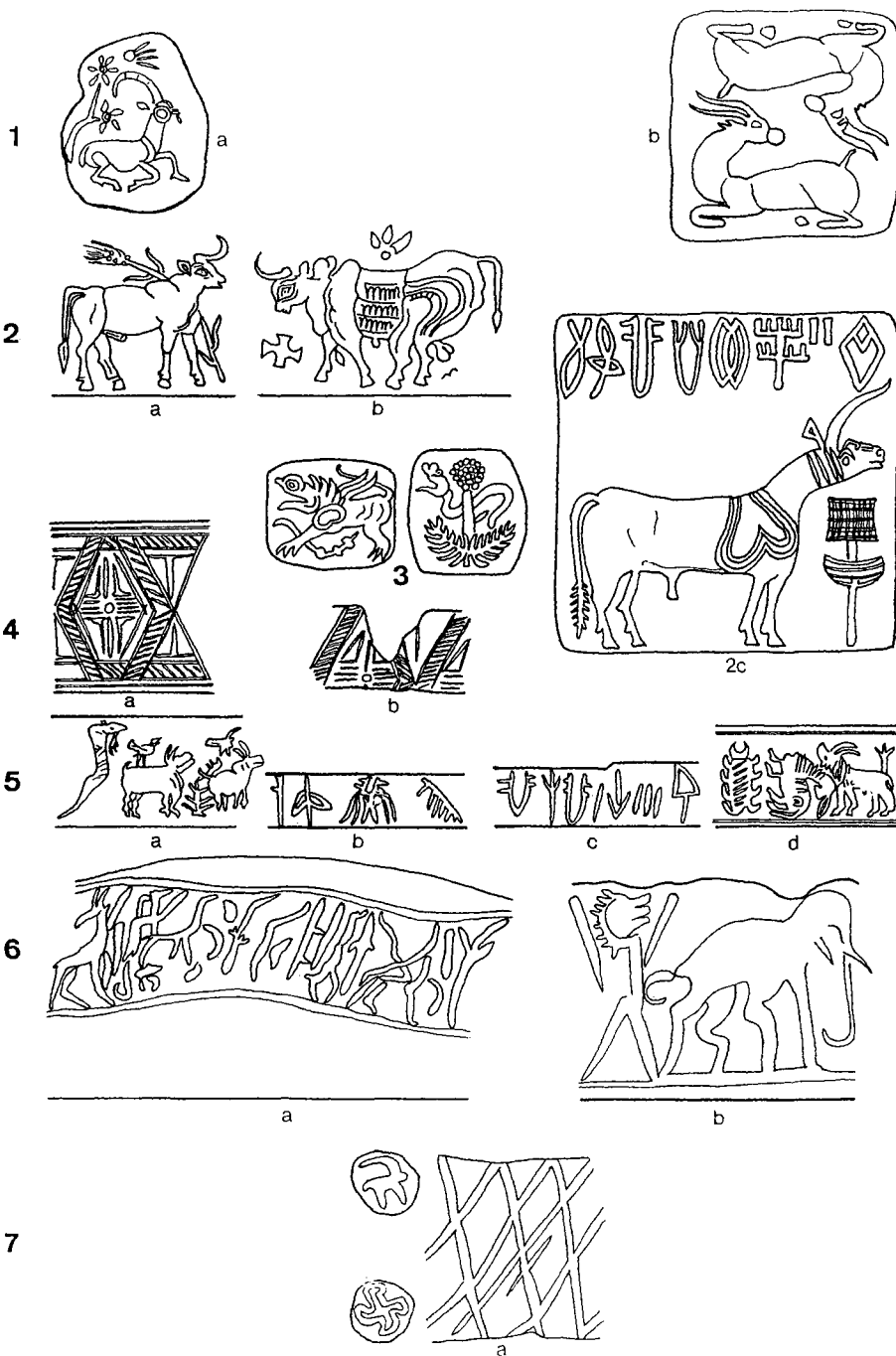
Seal designs

- 1a *Tell Asmar (Frankfort 1934: fig. 17; cf. Amiet 1980: nos 407, 454, 457, 737-750, 760, 762).*
- 1b *Mohenjo-Daro (Joshi and Parpola 1987: 88.M-353).*
- 2a *Mesopotamia (Amiet 1980: no. 397).*
- 2b *Susa (ibid.: no. 515; cf. 514, 534).*
- 2c *Mohenjo-Daro (Joshi and Parpola 1987: 16.M-28 and passim).*
- 3 *Murghab(?)—Cherkasky Collection (Pittman 1984: no. 28).*
- 4a *Ur (Collon 1987: no. 40).*
- 4b *Shahr-i Sokhta (Lamberg-Karlovsky and Tosi 1973: fig. 18).*

LATER THIRD MILLENNIUM BC: MESOPOTAMIAN INFLUENCE ON THE INDUS

Cylinder seals

- 5a *Mohenjo-Daro (Joshi and Parpola 1987 102.M-418).*
- 5b-c *Harappa (ibid.: 233.H-368f).*
- 5d *Mohenjo-Daro (Collon 1987: no. 606).*
- 6a *Daimabad (Joshi and Parpola 1987: 352.Dmd-4).*
- 6b *Maski (ibid.: 358.Msk-1).*
- 7a *Mohenjo-Daro (ibid.: 102.M-419).*



6), or they betray a knowledge of Mesopotamian themes which, when they can be dated, probably belong to the Akkadian period (Figure 7). The converse is also true and cylinder seals from Susa, Tell Suleimeh, Tell Asmar and Ur bear Indus Valley designs (Figure 8). Furthermore, Indus Valley stamp seals of the mature square type have been found throughout Mesopotamia: at Tello, with a tiger, and at Kish and possibly Umma, with a “unicorn” (Figure 9), and at Tell Asmar and Tepe Gawra with concentric squares (Figure 10). Although the distribution of these cylinder and stamp seals would indicate that an overland route was used, the cylinder from Ur might show that a maritime route was also in use.

Boehmer (1974) has suggested that it was by this maritime route that water-buffalo were imported into Mesopotamia in Akkadian times. They first appear, with their horns depicted as if seen from above, according to the Indus Valley convention, on a seal belonging to a servant of Enheduanna, daughter of Sargon of Akkad, *ca.* 2300 BC

LATER THIRD MILLENNIUM BC: MESOPOTAMIAN INFLUENCE ON THE INDUS

Cylinder seals (continued)

- 7b *Kalibangan (ibid.: 311.K-65).*
- 7c *Mohenjo-Daro (ibid.: 77.M-311).*
- 7d *Kalibangan (ibid.: 307.K-50).*
- 7e-g *Mohenjo-Daro (ibid.: 76.M-306-308).*
- 7h *Mohenjo-Daro (During Caspers 1985a: pl. 2d).*

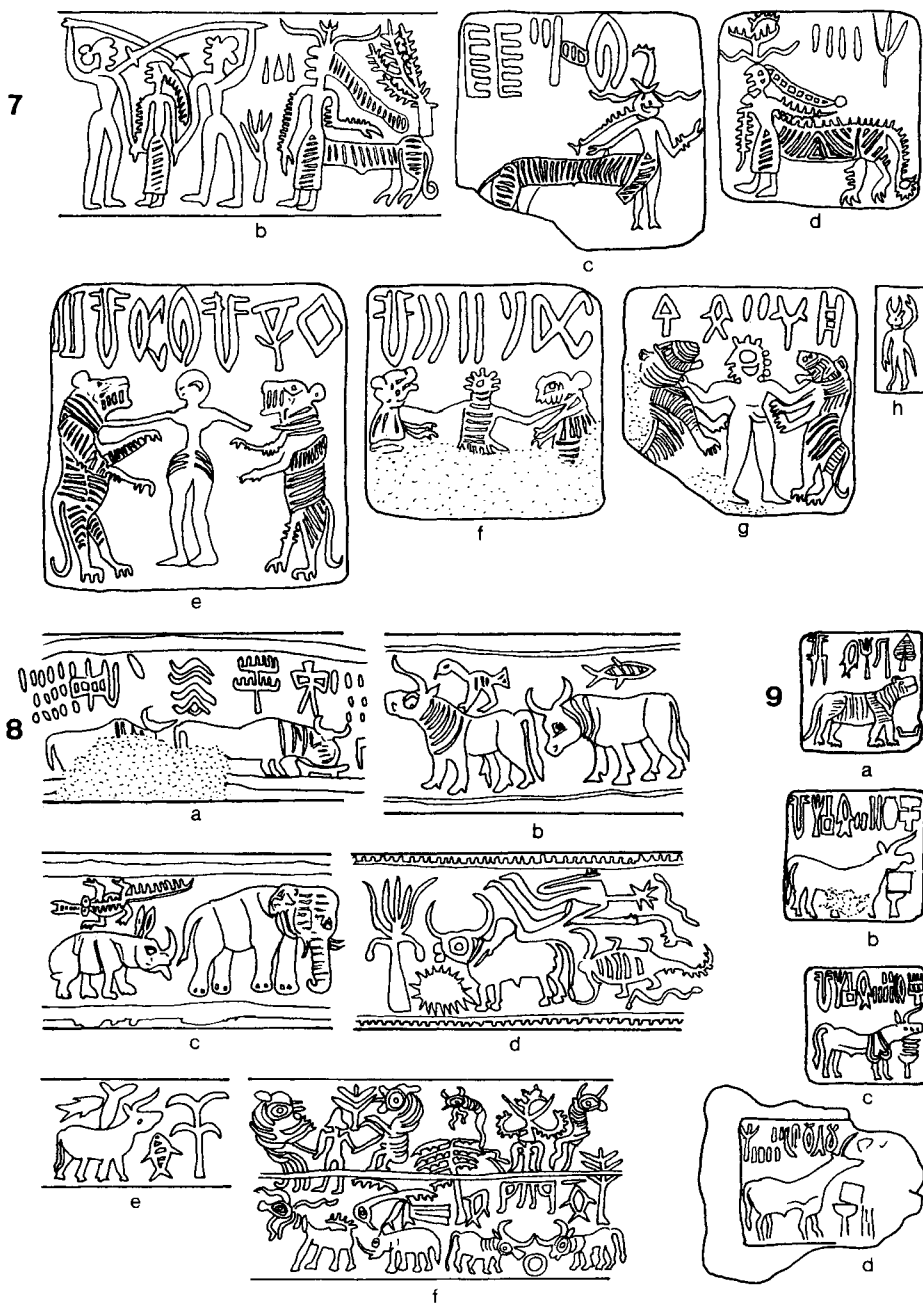
LATER THIRD MILLENNIUM BC: INDUS INFLUENCE ON MESOPOTAMIA

Cylinder seals

- 8a *Susa (Collon 1987: no. 608).*
- 8b *Tell Suleimeh (ibid.: no. 609).*
- 8c *Tell Asmar (ibid.: no. 610).*
- 8d-e *Ur (ibid.: nos 611-2).*
- 8f *Levant(?)—ex-de Clercq Collection (ibid.: no. 614).*

Stamp seals

- 9a *Tello (During Caspers 1973: fig. 84).*
- 9b *Kish (ibid.).*
- 9c *Kish (Buchanan 1984: no. 232).*
- 9d *Umma(?)—sealing (ibid.: no. 233).*



(Figures 11a, c). Throughout the dynasty they are depicted predominantly on high-quality court seals (e.g. Collon 1987: nos 528f). The water-buffalo disappears from Mesopotamian iconography after the collapse of the Akkadian dynasty and is thereafter only attested on the Black Obelisk of Shalmaneser III in the ninth century BC (Figure 11b), and from the seventh century AD onwards. To handle this trade it was necessary to employ interpreters and the seal of a Meluhhan interpreter of the Akkadian period shows him to have been a person of some standing (Figure 12).

Two other links between Mesopotamia and the east in Akkadian times are provided by a vase fragment in the Louvre which is said to have come from Uruk and which shows a fettered prisoner being led by a nose-ring (Figure 13a). His distinctive hair-style is to be found on two-sided lapis lazuli discs from South-East Iran one of which was among

LATER THIRD MILLENNIUM BC: INDUS INFLUENCE ON MESOPOTAMIA

Stamp seals (continued)

- 10a Tell Asmar (During Caspers 1973: fig. 85).
- 10b Tepe Gawra (*ibid.*).
- 10c Mohenjo-Daro (Joshi and Parpola 1987: 86.M-350).
- 10d Harappa (*ibid.*: 86.H-125).

Water-buffalo

- 11a Ur—fragmentary impression of a cylinder seal inscribed *Enheduanna daughter of Sargon: ...-kikudu, the scribe, [is her servant]* (Collon 1987: no. 908).
- 11b Nimrud—detail from Black Obelisk of Shalmaneser III.
- 11c Mohenjo-Daro (Joshi and Parpola 1987: 66.M-269).

Meluhhan interpreter's seal

- 12 Ex-de Clercq Collection (Collon 1987: no. 637).

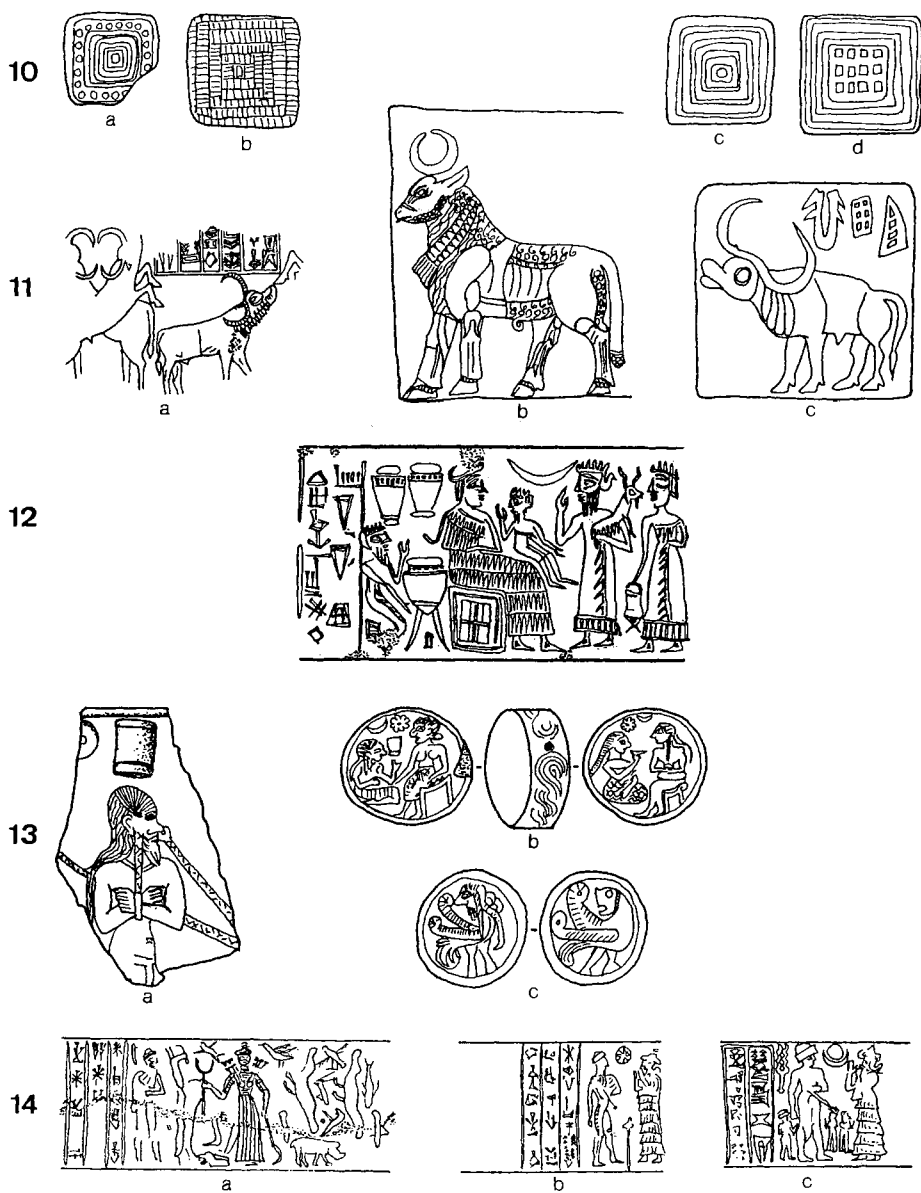
Figure with side-lock

- 13a Uruk(?)—stone vase fragment (Amiet 1976: no. 24).
- 13b South-east Iran—lapis lazuli disc (Amiet 1986: no. 128).
- 13c Tod Treasure (Egypt)—lapis lazuli disc (Porada 1982: fig. 9).

EARLY SECOND MILLENNIUM BC CONTACTS

Old Babylonian cylinder seals found in Egypt, Afghanistan and India

- 14a Egypt—Rijksmuseum van Oudeheden, Leyden.
- 14b Near Herat (Collon 1987: no. 580).
- 14c Nagpur (Suboor 1914).



objects of varying date from the Tod Treasure, found in Egypt in a context dated to *ca.* 1900 BC (Figures 13b-c). Although many of the silver objects from the Tod Treasure are probably of Aegean or Levantine origin, the lapis lazuli seals seem to have come from Mesopotamia and may have been handled by traders operating through the Gulf. To one such trader may have belonged a haematite seal in Leyden which is said to have been found in Egypt and which depicts a hippopotamus and two crocodiles alongside a typical Old Babylonian scene and inscription. Other Old Babylonian seals have been found near

EARLY SECOND MILLENNIUM BC CONTACTS

Early Gulf seals with Indus Valley designs

- 15a-g *Ur (Gadd 1932: nos 15, 2-5, 16 and 1 respectively).*
- 15h *Tello (Delaporte 1920: pl. 2.8).*
- 15hh *Babylon (Gadd 1932: no. 17, then thought to be unprovenanced).*
- 15i-j *Failaka (Kjaerum 1983: nos 279, 319).*
- 15k *Qalaat Bahrain (During Caspers 1982: pl. 6b).*
- 15l *Susa (Amiet 1986: no. 94).*
- 15m *Luristan (Amiet 1973: pl. 26a).*
- 15n *Tepe Yahya (Lamberg-Karlovsky 1973: pl. 26a).*
- 15o-p *Mohenjo-Daro (Joshi and Parpola 1987: 101.M-416, 100.M-415).*
- 15q *Chanhujo-Daro (ibid.: pl. 335.C-32).*

Bactrian camels

- 16a *Syria—Walters Art Gallery, Baltimore (Collon 1987: no. 738).*
- 16b *Taip Depe (ibid.: no. 596).*
- 16c *Bactria (ibid.: no. 601).*

Snakes

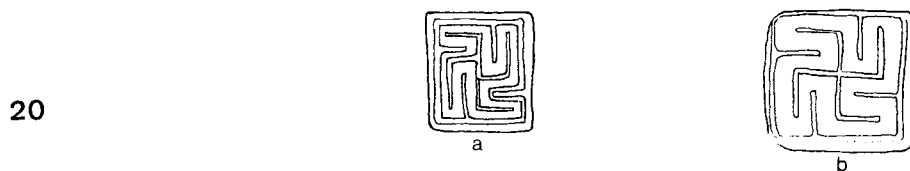
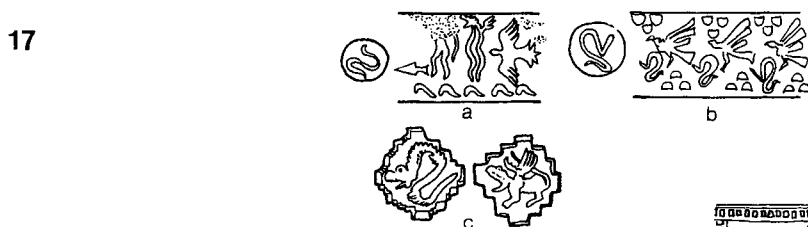
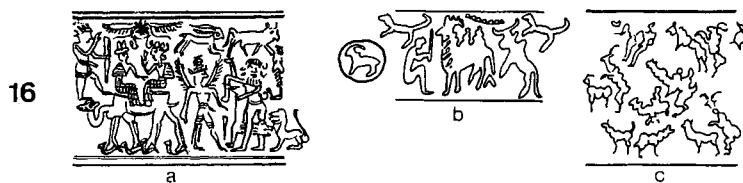
- 17a *Taip Depe (Collon 1987: no. 597).*
- 17b *Akra (ibid.: no. 598).*
- 17c *Murghab (Sarianidi 1986: 231).*

Cylinder seals

- 18a-b *Taip Depe (Collon 1987: nos 599-600; cf. nos 146-7 from Syria).*
- 19 *Samarkand—ex-Musée Guimet (Collon 1987: no. 602).*

Stamp seals

- 20a *Altyn Depe (V.M. Masson, in Kohl 1981: 151).*
- 20b *Mohenjo-Daro (Joshi and Parpola 1987: 85.M-335; cf. 84-6, 192-4, 256 etc.).*



20

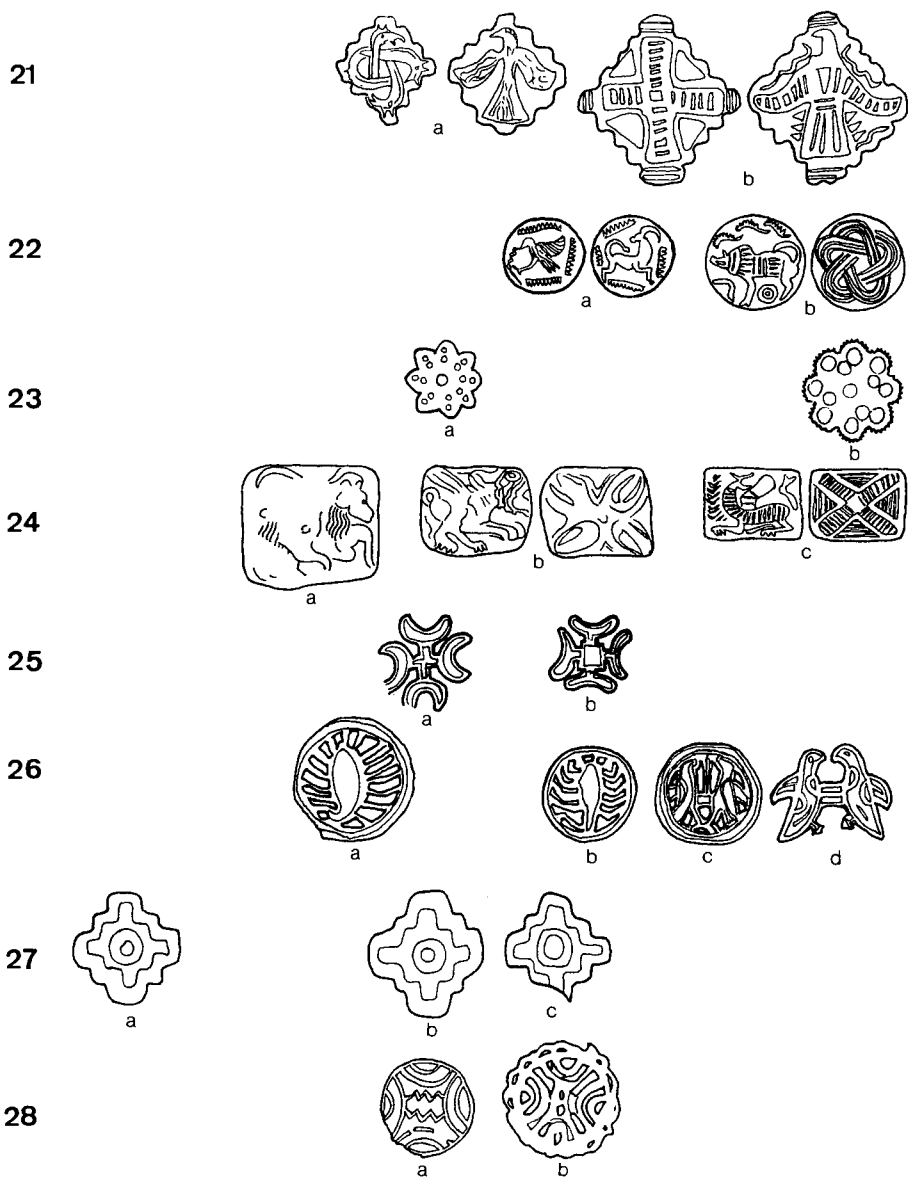
Herat in Afghanistan (Figure 14a) and at Nagpur in central India (Figures 14b-c) but it is not clear how or when they reached these areas.

In the last two centuries of the third millennium BC Dilmun rose to prominence with the increased importance of the maritime route (there may have been problems with the overland route since it seems that the lapis lazuli trade, for instance, was virtually at a standstill). To this period belong circular Gulf seals of the Early type, found at Failaka and Qalaat Bahrain, with a small central boss and one or two grooves on the back (Figure 15). Some Indus seals and imitations of them adopt this shape. These have been found at Ur (Figure 15a, with a pseudo Indus Valley inscription was in an Akkadian/Ur III grave, PG 401), Tello, Failaka, Bahrain, Susa, perhaps in Luristan, Tepe Yahya, Mohenjo-Daro and Chanhü-Daro. Most of these seals depict a bull with lowered head under signs in the Indus Valley script. A similar bull appears under a cuneiform

EARLY SECOND MILLENNIUM BC CONTACTS

Stamp seals (continued)

- 21a *Gonur I (V.I. Sarianidi, in Kohl 1981: 233f).*
- 21b *Harappa (Joshi and Parpola 1987: 205.H-166).*
- 22a *Akra (Lambert 1986: pl. 12.3).*
- 22b *Chanhüjo-Daro (Joshi and Parpola 1987: 343.C-49-50).*
- 23a *Murghab (Sarianidi 1986: 253, pl. 86).*
- 23b *Mehi (Joshi and Parpola 1987: 358.Mehi-1).*
- 24a *Failaka (Kjaerum 1983: no. 335).*
- 24b *Murghab (Sarianidi 1986: 227).*
- 24c *Sibri (Jansen and Urban 1985: 258.B24).*
- 25a *Shahdad (Amiet 1986: no. 118).*
- 25b *Bactria (ibid.: no. 176).*
- 26a *Central Asia (ibid.: no. 97.7).*
- 26b *Bactria (Sarianidi 1977: fig. 56.2).*
- 26c *Bactria (Amiet 1986: no. 187).*
- 27a *Mari (Beyer 1989: 113).*
- 27b *Shahr-i Sokhta (ibid.: 114).*
- 27c *Murghab (ibid.: 117).*
- 28a *Shahr-i Tump (Piggott 1950: 219, fig. 26).*
- 28b *Dashli (Sarianidi 1977: fig. 54.3).*



inscription on a square stamp seal from Ur. The inscription seems to be a transcription of a foreign name, possibly of Indus Valley origin.

The eastern trade of northern Mesopotamia at the beginning of the second millennium presents some tantalizing problems. The tin which is supposed to have been traded by Assyrian merchants with Anatolia is generally thought to have come from the east, possibly from northern Afghanistan. Whereas the western trade-routes are well-documented, however, the texts are silent about trade with the east. Seals provide a few tentative indications of its existence. The Bactrian camel appears on a Syrian seal and on seals from Taip Depe, in the Murghab in western Central Asia, and from Bactria (Figure 16). It is remarkable that this and other contemporary seals from the Murghab adopt the Mesopotamian cylinder seal shape but in its unperforated, stamp-cylinder form with a handle and a design on the base. One has a distinctive snake on it which is repeated on the base and also occurs on a seal in the British Museum which was acquired at Akra in Pakistan (Figures 17a-b), on the Cherkasky seal referred to above (Figure 3), and on another seal of Murghab type (Figure 17c). Two cylinder seal impressions on a sherd from Taip Depe have an iconography which is derived from Syria (Figure 18). Furthermore the stamp-cylinder shape also occurs in Bactria where a turquoise example has been found (Figure 16c), and at Sibri to the north of Mohenjo-Daro, where two seals

EARLY SECOND MILLENNIUM BC CONTACTS

Late Gulf seals

29a-e *Ur (Gadd 1932: nos 14, 8-9, 12-13 respectively).*

29f-h *Susa (Amiet 1986: 279, nos 3-5).*

29i *Bactria (Sarianidi 1986: 231; cf. 246).*

29j *Lothal (Joshi and Parpola 1987: 268.L-123).*

Impressions on tablets of Late Gulf seals

30a *Southern Mesopotamia (Buchanan 1981: no. 1090).*

30b-c *Susa (Amiet 1986: no. 90.I-2).*

Cylinder seals in Late Gulf style

31a *Failaka (Collon 1987: no. 604).*

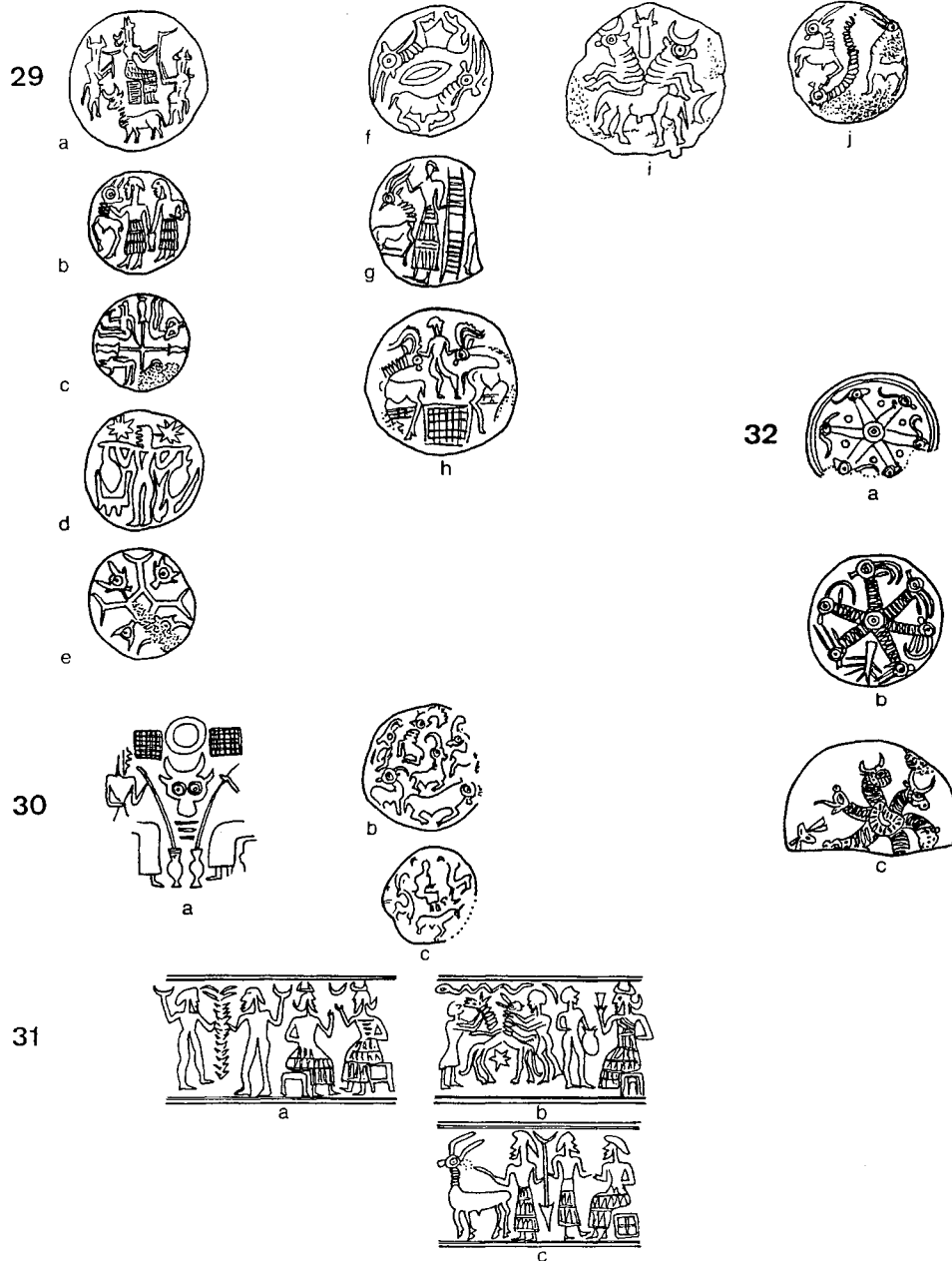
31b-c *Susa (Amiet 1986: no. 90.6-7).*

Stamp seals showing Late Gulf style influence

32a *Acemhöyük (Porada 1971: pl. 10.8).*

32b *Failaka (ibid.: pl. 10. 9).*

32c *Mohenjo-Daro (Joshi and Parpola 1987: 101.M-417 but note that the seal shape is of Early Gulf type).*



have designs which include lions attacking zebras (described but not illustrated in Jansen and Urban 1985: 104). A cylinder seal from the Musée Guimet, now lost, was acquired in Samarkand and bears a most unusual design with a wasp-waisted, winged bull (Figure 19).

There is further evidence of links between western Central Asia and the Indus, for instance a seal with a swastika from Altyn Depe (Figure 20) which has many parallels in the Indus and a seal with deckled edges, a bird on one side and entwined snakes on the other, from Gonur 1 in the Murghab, which is closely paralleled by a seal from Harappa but with a cross instead of entwined dragons (Figure 21). A small stamp seal in the British Museum, acquired at Akra at the same time as the stamp-cylinder (Figure 17c) and made from the same unusual kaolin-rich clay resembles in shape a pair of identical imported seals from Chanhujō-Daro (Figure 22) and in design seals from the Murghab. A drilled, rosette-shaped, stone seal from Mehi, to the west of Mohenjo-Daro, originated in the Murghab (Figure 23) and so did a rectangular, bifacial seal from Sibri, to the north of Mohenjo-Daro, with a cross on one side and a winged quadruped on the other (Figure 24c; cf. 24b). A worn, rectangular, bifacial, cushion-shaped seal of probable western Central Asian origin has been found on Failaka in the Gulf (Figure 24a).

The distribution of compartmented copper seals of Central Asian type, or their impressions, also indicates a trade-route running westwards from Central Asia and south to the Gulf and the Indian Ocean; they have been found in the Murghab, in Bactria, as far as the Ordos on the confines of China, and in Iran at Susa, Shahdad, Shahr-i Sokhta, and at Bampur and Shah-i Tump in Baluchistan (Figures 25-28).

Indeed much of the trade could have been carried via the Gulf since the Dilmun route was extremely active in the early centuries of the second millennium, with Failaka and Bahrain acting as middlemen in a trade from which the Indus Valley and Ur had largely withdrawn. Gulf stamp seals of Late type, similar to those from Failaka and Bahrain, with a low, wide boss, triple lines and four centre-dot circles on the back, have been found at Ur and Susa, and in Bactria, and at Lothal (Figure 29; the map in Joshi and Parpola 1987: 376 indicates that a Gulf seal was found on Bet Dwaraka Island but I do not know whether it is of Early or Late type). There are also local imitations from Ur and Susa (Gadd 1932: nos 10-11; Amiet 1972: nos 1719-1726). The impression of a Gulf seal on a tablet of Gungunum of Larsa is dated to 1923 BC (by the middle chronology) and those on tablets from Susa are probably of much the same date (Figure 30). A few cylinder seals carved in the Gulf style have been found at Failaka and Susa (Figure 31). Finally, an impression from Acemhöyük in central Anatolia, found with others from the reign of Shamshi-Adad I of Assyria (*ca.* 1800 BC), is a local variation on a motif which occurs on Gulf seals from Failaka, and an Indus Valley version comes from Mohenjo-Daro (Figure 32) and there are Indus Valley inspired cylinder seals of this date from Ur.

Echoes of the days of glory, when Dilmun handled maritime trade, are found, as already noted by Julian Reade (1986), in the inscription on a Kassite seal belonging to

a certain Uballissu-Marduk who lists several of his ancestors including a viceroy of Dilmun (Collon 1987: no. 237; cf. 929 belonging to the same owner).

It should not be forgotten that the materials from which seals are made also provide evidence of trade (Collon 1987: 100-104, based on analyses by Mavis Bimson and Margaret Sax in the British Museum Research Laboratory, and 135-7). It may not be a coincidence that burnt steatite was used for Mesopotamian seals of the early third millennium BC (the so-called Ninevite 5 or Piedmont style seals), for seals from the Indus Valley in the second half of the second millennium, and for Egyptian design amulets and, later, scarabs from the Old Kingdom onwards. The appearance in late Early Dynastic III, Akkadian and, to a lesser extent, Ur III contexts of aragonite seals made from the columella of large Meso- or Neogastropods of species found in the Red Sea and Indian Ocean, provides well-dated evidence for maritime trade. The fluctuating presence of lapis lazuli is also an excellent indicator of trade, and its presence in hoards at Tod in Egypt and Thebes in Greece, as well as references in the Amarna Letters, attest the widespread popularity of this material at all periods. The fact that cornelian and, especially, agate seals are often barrel-shaped may indicate their origin as beads imported from the Bay of Cambay. Amazonite, used for seals in the second millennium and for beads in the first, may have come from Kashmir, the Urals or from a recently discovered source in the Yemen (Di Mario 1980). Finally a handsome Neo-Assyrian seal of ca. 700 BC, which entered the British Museum collections in 1835, is made of grossular green garnet and may also have originated in Kashmir or the Urals; analysis has shown that a Neo-Babylonian seal in the same collection is also made of this unusual material (Collon 1987: nos 773, 375).

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A Sumerian Motif in Late Indus Seals?

by ASKO PARPOLA

The two Late Harappan seals discussed in this paper¹ were excavated by Ernest Mackay in Chanhujō-daro (Mound II) in 1935-6 and first published by him in 1943.

One of them (Figure 1)² is a square seal of the Indus type, made of dark brown steatite and measuring 15 by 14 by 4.5 mm.³ Its back is “unfinished, with a rectangular handle measuring 0.39 by 0.29 by 0.14 inches, and pierced by a small hole”. The seal came from square 7/c, loc. 135, level +10.4 feet (Mackay 1943: 291). According to Mackay (*op. cit.*: 142) the level at which it was found “would lead one to date it to the Harappā period”, but he nevertheless doubtfully classifies it as belonging to the Jhukar period. This classification is apparently based on the rough workmanship of the seal, which does point to the lowering of carving standards at the end of the Mature Harappan period.

Mackay suggested that the motif engraved on this seal is “an antelope standing in a thicket”. This is no standard motif, however, so there is room for alternative interpretations certainly allowed by the roughness of the carving.

After the French excavations carried out in recent years under the leadership of Jean-François Jarrige at Mehrgarh VIII, Sibri and Nausharo in the Kachi plain near the Bolan pass in Baluchistan, we know that the Jhukar culture of Sind resulted from the merger of immigrants representing the Namazga V culture of Greater Iran and the local traditions of the Indus civilization (Jarrige 1985; 1987a, b).⁴ The iconography of the seals found in Bactria and Margiana, summarized by Sarianidi (1986), therefore offers the most

¹ The present paper was announced as forthcoming in Joshi and Parpola (1987: xxxi, n. 79).

² The excavation number of this seal is CH 1801. It is now in New Delhi in the Central Archaeological Collection of the Archaeological Survey of India housed in the Old Fort (Purana Qila), having the museum accession number ASI 63.12.7. The seal has been published before by Mackay (1943: pl. 50.6) and by Joshi and Parpola (1987: 333.C-26).

³ The measurements of these two seals given in mm were taken in 1985 by Ms Erja Lahdenperä, photographer of the Corpus of Indus Seals and Inscriptions Project, University of Helsinki.

⁴ The formation of the Jhukar culture seems to result from the first major immigration of an Aryan-speaking community into the Indian subcontinent. For a detailed discussion with further references, see Parpola (1988).



Figure 1 Late Harappan seal from Chanhujo-daro (excavation no. CH 1801, museum no. ASI 63.12.7). 15 by 14 by 4.5 mm. After Joshi and Parpola (1987: 333.C-26). Photo by Erja Lahdenperä for the University of Helsinki, © Archaeological Survey of India: above—the original seal; below—an impression on plasticine

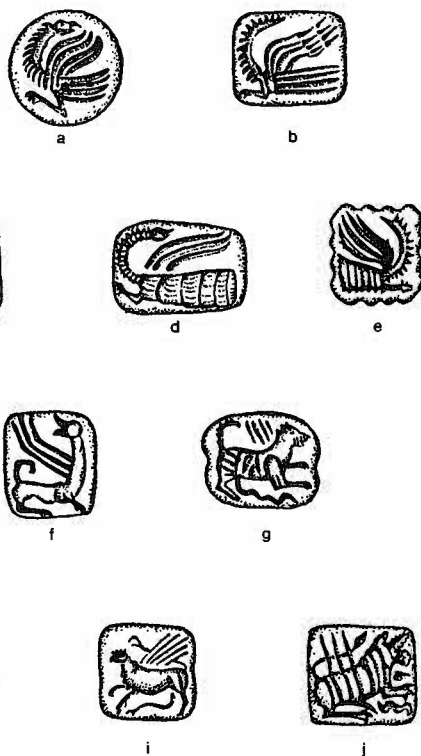


Figure 2 Seals representing the Bronze Age civilization of Bactria and Margiana (ca. 2000 BC). After Sarianidi (1986: fig. 5: 8 = a, 10 = b, 9 = c, 5 = d, 6 = e, 1 = f, 12 = g, 2 = h, 15 = i, 4 = j)

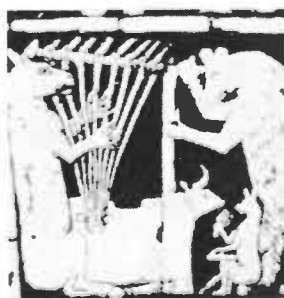


Figure 3 Detail from plaque of shell-inlay from the end of sound-box of Ur lyre (after Pritchard 1969: fig. 192)



Figure 4 Banquet scene on a votive plaque from Nippur (after Pritchard 1969, supplement: fig. 47)

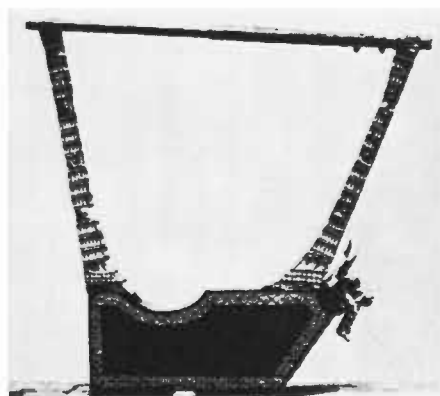


Figure 5 The Sumerian "bull-lyre": reconstructed lyre with sound-box ending in a bull's head, from Ur (after Pritchard 1969: fig. 193)



Figure 6 The Sumerian "bull-lyre" on ancient Near Eastern cylinder seals (Amiet 1980: 1193 = a, Royal Cemetery of Ur; 1194 = b, Ur; 1200 = c, Khafaje; 1765 = d, Susa; 1198 = e, Uruk; 1201 = f, Fara; 1358 = g, Umma; 1307 = h, Fara)

natural point of comparison for the Chanhujō-daro seals under discussion, because we search in vain for any parallel in the Indus material.

The “griffin” motif in the seals from Bactria and Margiana illustrated in Figure 2 would seem to provide a satisfactory explanation as far as the seal in Figure 1 is concerned. Especially the variants in Figure 2i-j, where the tail goes horizontally through the vertical lines representing the wings of the griffin, offer a strikingly close parallel.

There is, however, also an alternative possibility for interpreting the motif of the Chanhujō-daro seal. It could represent the Sumerian “bull-lyre”,⁵ known both from directly preserved examples (Figures 4, 5) and from the glyptic art (Figure 3), including seals from many different sites (Figure 6). In the Mesopotamian seals the “bull-lyre” motif is associated with the “banquet scene”; it first appears in the Early Dynastic IIIA period and is most common in the Early Dynastic IIIB period, around the middle of the third millennium BC.⁶

The “bull-lyre” motif is not known from the iconography of the Mature Harappan seals and amulets. One problem with this identification is the position of the horizontal line, in the middle of the supposed lyre rather than at the top of it; I owe this observation to Dr Gregory L. Possehl. This could, however, be ascribed to the bad workmanship of the seal. On the other hand, the “bull-lyre” hypothesis is supported by the motif of the other seal from Chanhujō-daro to be discussed in this paper.

This second seal (Figure 7) is round with a pierced knob in the back and made of grey pottery.⁷ It measures 25 by 26.5 by 16 mm, and was found at Chanhujō-daro in square 7/E, loc. 121, level +13.2 feet (Mackay 1943: 290). This seal clearly represents the post-urban Jhukar period. The motif is described by Mackay as “two animals (oxen?), one placed above the other. Vertical markings above.”

This very rough carving could well render a variant of the above-mentioned Sumerian “bull-lyre” theme, in which the instrument has two bull-shaped sound-boxes (see Figure 8). Similar lyres with sound-boxes consisting of two superimposed bulls are seen on two round stamp seals of the “Dilmun type”, which have been found on Failaka island in the Gulf (Figure 9).⁸ They date approximately from the same period as the Jhukar type seals, *i.e.* from the first centuries of the second millennium BC.⁹ This identification, then, would imply that the Harappans continued their sea-trade with the Gulf even in the Jhukar period and that people from Chanhujō-daro were actively involved in this trade.

⁵ On the “bull-lyre”, see Woolley (1934); Galpin (1937); Stauder (1957); Hartmann (1960); Barnett (1969); Rimmer (1969); Amiet (1980: 125); Spycket (1983); and Duchesne-Guillemin (1984).

⁶ See Amiet (1980: 125 and nos 1193-4, 1198, 1200-1, 1307, 1358, 1765, all reproduced in Figure 4) and Collon (1987: 151-3 and nos 667-9).

⁷ Excavation no. CH 1652, museum accession no. ASI 63.12.36. Published before in Mackay (1943: pl. 49.1) and Joshi and Parpola (1987: 340.C-41).

⁸ See Kjærøum (1983: 114f, nos 267f).

⁹ Brunswig *et al.* (1983); Højlund (1989).



Figure 7 Jhukar seal from Chanhujodaro (excavation no. CH 1652, museum no. ASI 63.12.36). After Joshi and Parpola 1987: 340.C-41. Photo by Erja Lahdenperä for the University of Helsinki, © Archaeological Survey of India: left—the original seal; right—an impression on plasticine.

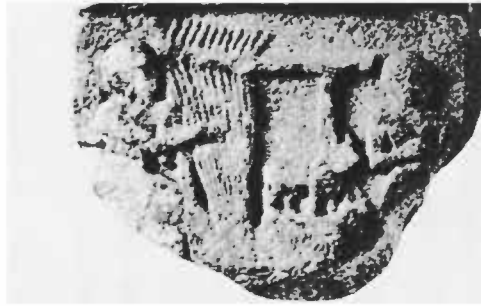


Figure 8 The Sumerian “bull-lyre” with a sound-box consisting of two superimposed bulls: relief from Tello (after Pritchard 1969: fig. 191)

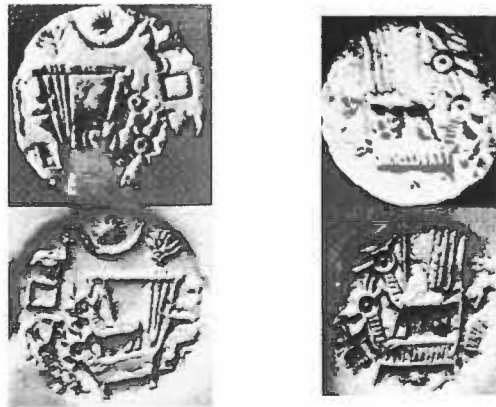


Figure 9 The Sumerian “bull-lyre” with a sound-box consisting of two superimposed bulls: left—Dilmun seal from Failaka (after Kjærøum 1983: 267); right—Dilmun seal from Failaka (after Kjærøum 1983: 268)

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Dilmun, Magan and Meluhha: some Observations on Language, Toponymy, Anthroponymy and Theonymy

by JEAN-JACQUES GLASSNER

The contribution made by an Assyriologist to a conference about the Indian Ocean may only be slightly interesting. From a Mesopotamian point of view, or better from what remains of it, the very name of any such ocean is lost. We are totally ignorant as far as trade routes are concerned. On the other hand, with regard to trade relationships and circulation of goods, everything we know about them has been said already (Glassner 1989; Heimpel 1987; 1988; Carter 1981; 1983; 1987; Al Khalifa and Rice 1986; Pettinato 1972; Potts 1983). Therefore, toponymy will be the main subject of the present study.

Turtles

First, just a word about turtles, a subject which has escaped the attention of previous writers. We learn, through an old Babylonian document from Ur (Figulla 1953: no. 546), that different kinds of turtle shells were imported from the Gulf, via Dilmun, most probably shells of sea-turtles living in the Erythrean sea. Now we may add that turtle meat, as well as turtle eggs, was highly appreciated in Mesopotamia for eating, particularly during some religious rituals, and shells were used as ingredients in making medications (Owen 1981: 41ff). On the different kinds of sea-turtles, the use of their meat and shells, see the remarks of R.P. Labat (1722), Dominican, astronomer, artilleryman, sailor, pirate and gastronome, who lived in the French West Indies at the very beginning of the eighteenth century.

Meluhha

In the third millennium, the term Meluhha designated the Indus valley and its vicinity. This toponym is a foreign one, whose transcription into cuneiform writing makes it look like a Sumerian word. Meluhha was certainly a foreign country where a foreign language was spoken: an Old Akkadian cylinder seal retains the name of Šū-ilišu, eme.bal Meluhha, "interpreter of the Meluhha language" (Edzard:1968-9: 15, no. 33). Besides,

a bilingual lexicographical list quotes a word belonging to the language of Meluhha with its Akkadian equivalent: $\dot{u}\dot{s}am\dot{t}u = GIS \dot{U}.G\dot{I}R$ *ina Meluhhi* (von Soden 1965: 1159, s.v.); behind the logogram $G\dot{I}S \dot{U}.G\dot{I}R$ two Akkadian terms stand out: *ašagu*, one of the most widespread kinds of acacia, and *eṭṭetu/eddetu*, a widely distributed boxthorn (von Soden 1965: 77f, 266). Unfortunately, the sources quoting this botanical term are to be dated from the first millennium, a period in which the name Meluhha most generally designated Nubia or Ethiopia and no longer the Indus valley and Gedrosia (Weidner 1952-3: 10; Moran 1987: no. 133.17 and n. 1: Meluhha = Kaši, that is to say Kuš); anyway, at that time, it was a learned term.

Further, an old Akkadian juridical text indicates that a certain $L\dot{u}.s\dot{u}n.zi.da$ $l\dot{u}$ $Me.luh.ha.ke_4$, “Lu.sunzida, man from Meluhha”, has been condemned to pay ten shekels of silver to somebody for having broken his tooth (Sollberger 1972: no. 76). The name Lu.sunzida is *hapax legomenon* in Mesopotamia but it has a good Sumerian look: $s\dot{u}n.zi$, written without the divine determinative, is a well-documented epithet of the goddess Inanna (Römer 1965: 129.20; 1969: 97ff.22; Hallo and van Dijk 1968: 22.58; M. Cohen 1988: index, s.v.; variant $\acute{a}b.zi$; S. Cohen 1973: 184 and *passim*; etc.; the hypothesis of Parpola, Parpola and Brunswig, 1977: 160, is no longer acceptable). The proper name may concern somebody living in a place called Meluhha, such a place having existed at least a century later, within the Lagaš territory (Parpola, Parpola and Brunswig 1977). This place has a perfect Sumerian name and there is no proof of any link between it and the foreign country of Meluhha: the Sumerian scribes may have tried to express approximately, through their own graphic system and the provision of a good Sumerian appearance, the pronunciation of a foreign word.

An unpublished Harappan seal, kept in the Cabinet des Médailles at Paris, is also of great interest (to be published by D. Arnaud who kindly allowed me to mention it). Its inscription says: “So-and-so son of So-and-so”, the two names being typically Sumerian ones. Unfortunately, the seal was bought on the market and therefore nobody knows anything about its origin.

Relationships between Mesopotamia and Meluhha went on by sea. We know of “Meluhha-boats” and other ships called *magillum*. A so-called Dādi (a typical Akkadian name) received at Umma, in the Old Akkadian period, a *viaticum* as being $l\dot{u}.KU.m\acute{a}$ $Me.luh.ha.ka$. (Hackman 1958: no. 298). The expression $l\dot{u}.KU$ may have one of several meanings:

- $l\dot{u}.tukul$: a gendarme on a Meluhha boat (Foster 1982: 119; notwithstanding, the function is generally written $l\dot{u}.gi\dot{s}.tukul$);
- $l\dot{u}.tu\dot{s}$: a traveller on a Meluhha boat (Heimpel 1987: 76, no. 23);
- $l\dot{u}.dab_5$: a man in charge of a Meluhha boat.

But many things remain unknown: was it a Mesopotamian boat built on the Meluhha pattern, or was it a boat sailing from or to Meluhha? On the other hand, did an escort stay

on such travelling boats in order to protect them? An Ur III text says, about a boat coming from Dilmun, that it conveyed several soldiers, *aga.ús.lugal*; but we may have some doubts on their efficiency, as the text specifies that they arrived sick, *tu.ra.me* (Thureau-Dangin 1903: no. 337).

Overland relationships between Mesopotamia and Meluhha also existed. An Old Akkadian royal inscription known through an Old Babylonian copy says that Rīmuš, king of Akkade, defeated in Marhaši, possibly the province of Kerman, a coalition allying Zahara, Elam, Gupin and Meluhha (HS 193 quoted by Steinkeller 1982: 256, n. 77; on the historical value of these copies used as primary sources, see Glassner 1987: 2f).

Magan

With the toponym Magan or Makkan, the geographical horizon becomes nearer to Mesopotamia and slightly more precise. In the third and early second millennium documents, Magan designates Oman, and *a.ab.ba. Ma.gán* the Oman sea (Glassner 1989). In the middle of the second millennium, the sources designate south-eastern Iran by this name too (Glassner, in press). In first millennium documents, however, the word most commonly means Egypt (Weidner 1952-3: 6ff). It is impossible to know to which countries Esarhaddon's title "king of the kings of Dilmun, Magan and Meluhha" makes reference (Borger 1956: 80.28-9); the association of the three toponyms makes it clear that it is a literary and historical reminiscence. On the other hand, *gišmes.Ma.gán*, Akkadian *mušukkannu* in Neo-Assyrian and Neo-Babylonian sources, is a generic designation for a kind of wood which, in those periods, grew in royal Assyrian gardens as well as in southern Babylonia (Heimpel 1987: 57; 1988: 198f; Civil *et al.* 1977: 237-9). Nevertheless, in the first millennium, Oman was called Qadû (Borger 1972: 136), a country whose capital was Izkē (Potts 1985). These two last toponyms seem to be North-West or South-West Semitic ones (Zadok 1981: 56).

Dilmun

On the way to Mesopotamia, one finally arrives at Dilmun. Dilmun is better documented than the other areas. For the first time we have at our disposal, besides the testimony of Mesopotamian sources, some local ones too, the inscriptions from Failaka (Glassner 1984; 1990; Calvet and Glassner 1986) and Bahrain (Durand 1880, plate adjoining p. 193; André 1984: 339; 1989; Eidem, in press).

The Mesopotamian viewpoint: a summary

Late fourth to early third millennium

The word *NI.TUK/DILMUN* occurs, linked with metal objects or fabrics; it is mentioned in professional or geographical lists of words (Englund 1983; Nissen 1986). An administrative document of Uruk mentions a *namešda*, "important man", of the "good house/shrine of Dilmun".

With regard to the testimony of the archaic Ur sources, one would like to emphasize some information which has generally been omitted from recent works devoted to Dilmun. There, the word NI.TUK/DILMUN makes reference to :

- a name of a craft or function (Burrows 1935: no. 339.II.1);
- an anthroponym (*ibid.*: nos 13.II.1, 274.I.4, 339.I.7);
- a toponym (*ibid.*: nos 79.1, 196A);
- an anthroponym or toponym (*ibid.*: nos 91.2, 112.III.7, 346).

In the case of a toponym, sources are concerned with amounts of land allocated to several people. It means that a place existed, called NI.TUK/DILMUN, not far away from Ur, and belonging to its territory.

Early to mid third millennium

The word NI.TUK/DILMUN appears in the same contexts as previously (for example: Deimel 1924: no. 22.VII; Thureau-Dangin 1903: no. 4.II.3; Nikol'skij 1908: no. 306.III.1-2, *etc.* The proper name in Burrows (1935: pl. L, no. 50.rev.3) is not to be read *Šar-ru-um-DILMUN-mu-bí* as in Gelb 1957: 55, but *Šar-ru-um-máh-mu-pi*₅, with Alberti and Pomponio 1986: 114. On the testimony of the Ebla archive, see Pettinato 1983; Archi 1987). However, in several inscriptions of Ur.nanše (Steible 1982: Urnanše 24.V.3-5, 36.16-19, 37.16-18; 46.1'-3'), the allusion to the land Dilmun and to sea trade is an explicit one, though it had not been previously (*cf.* also Bauer 1972: nos 188.II.4; 189.IV.5; 191.II.5).

Late third to early second millennium

Except for the é.Dilmuna, Inanna's shrine in Ur (Kärki 1968: Warad-Sîn 8.32; Römer 1969: 97ff, 32; Wilcke 1987: 109.IV'.6'; *etc.*), Dilmun designated, henceforth, the only geographic area bathed by the "Lower Sea", a.ab.ba.igi.nim.ma, in other words the Gulf. An Old Babylonian document from Mari tells us of the existence of a king of Dilmun (Charpin 1984: 120, no. 61).

Mid to late second millennium

Dilmun had entered the Mesopotamian political sphere. A cylinder-seal in the British Museum mentions the name of Uši-ana-nūri-x (the end of the name is lost in a break of the seal, see Reade 1986: 332, photo no. 137), who was military governor of Dilmun, GÌR.NÍTA KUR.DILMUN.KI, and ancestor of a Kassite high official. Also, from the Assyrian sources, we learn that Tukulti-Ninurta I bore the title "king of Dilmun and Meluhha" (Schroeder 1922: no. 61.16).

First millennium

On the geographical level we have some indications which, except for the distinction between Dilmun.gu.la and Dilmun.tur.ra, "great Dilmun" and "small Dilmun" (Figulla 1953: no. 107), were not given before this period. Dilmun was known to be an island in the midst of the sea, *ša qabal tāmtim* (Alster 1983: 46; Kessler 1983: 150), but it was

also known to be on the Arabian mainland, reaching the border of the Bît Yakīn (Winckler 1889: pl. 40, V.26). The sea was then called *marratum* (*ibid.*, V.25). Now, a lexicographical text mentions a word from a foreign language which is called *marratum*, possibly the Dilmun language; it is the name of a plant, ^u*a-du-ma-tu* whose Akkadian equivalent is *kanašû* (Frank 1928: 42).

On the political level, the situation may have been comparable to the previous one: under Sargon II, Uperi, king of Dilmun, brought gifts to Assyria (Lyon 1883: 14: 32-36); Esarhaddon, himself king of the kings of Dilmun, Magan and Meluhha, required Qanāy, another king of Dilmun, to bring tribute to Assyria (Borger 1956: 86, §57.5); under Assurbanipal, Hundaru, king of Dilmun, brought tribute to Assyria (Thompson and Mallowan 1933: pl. LXXXVII, no. 98.129ff), but, at the same time, he was squeezed between both Elamite and Assyrian great powers (Kessler 1983: 149ff).

As we learn from Assyrian sources, other kingdoms existed in that area: Assurbanipal mentions the name of a certain ŠiLUM, king of HaZmani, a country to be located in the neighbourhood of Dilmun (Thompson and Mallowan 1933: pl. LXXXVIII, no. 98.135).

Finally, in the Neo-Babylonian period, we know of the existence of a governor of Dilmun under Nabonidus (Kessler 1983: 151ff).

The Dilmun viewpoint

The Kassite presence is confirmed by a fragment of an inscription of Burnaburiaš uncovered on Bahrain (André 1984).

In order to avoid any confusion with a Mesopotamian presence or influence at Dilmun, I will limit myself to the testimony of the only written documents which are with certainty remnants of the Dilmun culture. They are not very numerous, and most of them belong to the very beginning of the second millennium. Except for the inscribed foot from Bahrain discovered by Captain Durand during the last century, all of them come from Failaka (Glassner 1984: nos 1-6; 29; 32-40; Eidem 1987: 179). In brief, we learn from them of the existence of a god Inzak, of his spouse PA.NI.PA, of a toponym Agarum or Agaš, and of a temple called Egal.gula.

Summary of available sources

Dating

It is only since approximately 2500 BC, with the inscriptions of Ur.nanše, that the Mesopotamian sources attest, without any ambiguity, the presence of a country called Dilmun, to be located in the Gulf, next to Mesopotamia, and the existence of commercial relationships with it.

Writing

We notice, at the turn of the third to the second millennium, that Dilmun has taken the cuneiform script from Mesopotamia to write its own language.

Language

The language of Dilmun is as yet not well known. However, one can try to present some propositions:

1. The presence of the pronoun *ša* in the expression *Inzak ša Agarum/Agaš* (Glassner 1984: Failaka, no. 3; *etc.*), in its grammatically fixed form, evokes the Akkadian of the beginning of the second millennium and excludes the Old Akkadian of the third millennium.
2. the preposition *ana*, “for” (*ibid.*, no. 5), is typically Akkadian; we meet the forms *lí-na* at Ebla, *la* or *li* in Semitic.
3. *mudât*, the epithet of PA.NI.PA (*ibid.*, no. 3), from the root *yd’*, “to know”, constructed with the preformative *m-*, is a Semitic word.
4. *kakkullum*, a fermenting vat (*ibid.*, no. 49), is a Sumerian loanword in Akkadian.

Anthroponymy

Names such as Ribkatum (Failaka, no. 5), Rîmum (Durand 1880), Ṭēm-Inzak (Lambert 1976: 72, obv.5; *cf.* Failaka, no. 42, two names constructed with *ṭēmu*), Iddin-Inzaku (Scheil 1939: no. 434.4), Kūn-Inzaki (*ibid.*: no. 423.8), Iddin-Nin.Inzak (Figulla 1953: no. 286.9'), Inzak-gāmil (*ibid.*: no. 526.2'), Balti-Inzak (a woman: Nashef 1984: 25, no. 33 with reference), are Semitic ones, possibly Akkadian, but others, such as Ipnin-PA.NI.PA (Failaka, no. 6) are certainly not Akkadian. Other names, such as Sumu-lilil, Yatara-x, Yamiu, Yamrum?, Zilhum/Zirahum/Zabnum (Failaka, nos 6, 49, 29, 41, 42 respectively) are West Semitic ones, some of them being Amorite (on the Amorite presence, see Zarins 1986). Ili-ippašra and Ililiya/Illiya (Cornwall 1952: 143, Ni. 615, obv. 1-2; Ni. 641, obv 1, 3) are most probably Babylonian high officials. Of the names of the kings of Dilmun during the first millennium, Qanay is West Semitic, Uperi is either Semitic or Elamite, and Hundaru is Elamite (Kessler 1983: 159, n. 73 with bibliography). Finally, 'Idru, ambassador of Hundaru (Harper 1892-1914: no. 458.5'), has a West Semitic name, possibly Aramaic (Grelot 1972: 471, *s.v.*).

Theonymy

We know several divine names:

DINGIR.MAḤ: the “great goddess”, whose local name is hidden behind the sumerogram.

Inzak: the Mesopotamian sources speak about Inzak of Dilmun (Ebeling 1938), the local sources about Inzak of Agarum/Agaš (Failaka, nos 3, 6, *etc.*). Inzak of Dilmun's *paredra* was Meskilak, Inzak of Agarum's *paredra* was PA.NI.PA. The etymologies of Inzak and Meskilak are unknown (*cf.* the suggestions of Kramer, in Cornwall 1952: 142, or of Nashef 1984; 1986). The Mesopotamian scribes proposed some etymologies which were pertinent for them, but it does not mean we have to follow them (*cf.* the myth *Enki and Ninhursag* where the name Inzak is explained as En.zà .ag, “lord of the side”: Attinger 1984: 30.268,

and the commentary by the same scholar, p. 47). They are scholarly explanations based on graphic games which fitted ancient theology, but which are not to be taken into account by a modern historian or philologist. As for PA.NI.PA, a word which we do not know how to read properly, *a fortiori* we are ignorant of its etymology.

Toponymy

We know several names of temples, towns or regions:

Dilmun or Tilmun: the name occurs only in Mesopotamian sources. Until now, we have found it neither in Failaka texts nor in Bahrain ones. The link between the names Dilmun and Tylos, the ancient name of Bahrain island, has been agreed for a long time, and has led to the identification of Dilmun with Bahrain island. However, a Nestorian bishop was settled in Talûn (TLWN), and Robin refrains from locating it on the map (Beaucamp and Robin 1983).

Agarum/Agaš: the name is only attested in sources from the Gulf, Failaka and Bahrain. Mesopotamian sources do not know it. Agarum is the accepted reading of a toponym which may also be read as *A-kà/ga-rum* or *A-kà/ga-aš*. Cuneiform writing, at the end of the second millennium and in the first millennium, unlike in the third, renders the gutturals of Semitic languages imperfectly. The sign *A* may designate the semitic *aliph*, *hamza* and *ha*. We may therefore connect this toponym with Minean *Hgrm*, Safaitic *Hgš*, or South Arabian *Hgr*. Potts (1984: 111ff) proposed identifying Agarum with the site of Hagar, in the oasis of al-Hufûf. I myself proposed the provisional identification of Agarum with Failaka (Glassner 1984: 48). Neither of these identifications is certain.

The sources also give us names of temples:

é.šà.nam.SAR: apparently a temple of Šîn in Dilmun (Langdon 1919: no. 7.14, 19).

é.gal.gu.la: Inzak's temple in Agarum/Agaš (Failaka, nos 2, 3, 33, *etc.*). It looks like a Sumerian name ("great temple" or "old temple") but we may look rather for another local name behind the sumerogram.

é.kar.ra: the name of the god who lives in the Ekara is lost on the inscription of Failaka (no. 46), written probably in the sixth century but maybe earlier. The true name of the temple is lost behind the sumerogram (other temples called é.kara., a perfect Sumerian name, existed in Mesopotamia: *cf.* for example, M. Cohen 1988: 614, b+182, *etc.*). The existence of an Ekara at Dilmun is also mentioned in a Middle Assyrian lexicographic fragment (Schroeder 1920: no. 84.7') where the name of the god living in it is also lost. A bilingual hymn to the goddess Nanāya (Reiner 1974: 225.13) associates the Ekara with Inzak, Meskilak and Šuluhhîtu; the name Ekara in the Akkadian sentence has as its equivalent, in the Sumerian sentence, the name Ú.ra.al.la (*ibid.*: 225.12), *hapax*

legomenon, which may be a scribe's pure invention or the echo of an ancient reality.

We now have two names, Agarum/Agas̄ and Ekara, which look very similar if we accept the reading Akarum for the former. Though the name Agarum/Agas̄ is only attested in the second millennium texts, Ekara, so far as we know, is only documented by first millennium sources.

In the Aramaic inscription found at Failaka, its editor M. Sznycer (1986: 279, fig. 106) suggested reading the first five letters of the second line as BL 'DN, and interpreting it as the Assyrian name Bēl-iddina. But most recently J. Teixidor (1989) has proposed a different interpretation of the whole line. He reads BL 'KR NBW, namely "the lord of Ekara, Nabû". Certainly the use of BL, a divine proper name in Aramaic, instead of the expected MR', "lord", is surprising and the position of the epithet "Lord of Ekara" before the name Nabû is equally embarrassing. Teixidor thinks, however, that these difficulties can be obviated if BL 'KR is to be regarded as a single-word epithet, like MR' in Aramaic or 'DN in Phoenician, epithets which in the inscriptions always precede the divine names. Thus *Bel Ekara* at Failaka would be the title of Nabû, the deity who in the first millennium was equated with Inzak/Enzak of Dilmun (e.g. King 1909: pl. 35.obv.20, ^dEN.ZAK - glossed *za-ak* - = ^d*Nabû* Dilmun^{ki}; etc.).

'KR is, ultimately, an Aramaic writing which can correspond either to Agarum/Akarum (on this hypothesis, the toponym is to be understood as 'G/KR with the grammatical ending *-um*), or to the Ekara of the cuneiform sources.

Concluding proposals

The name Dilmun refers to a civilization which flourished in the north-west of the Gulf and which existed at least in the second half of the third millennium BC and the very beginning of the second. We may therefore grant that part at least of the toponymy goes back to that period.

So far as we may express an opinion, elements of Semitic culture are important in this civilization. In short, the anthroponyms and the remnants of the language show that at the beginning of the second millennium the people of Dilmun was a Semitic one. An Amorite presence, among these Semites, is obviously attested. The language is Semitic, perhaps an Akkadian dialect, at least very close to it or greatly influenced by Akkadian.

In the third millennium, when the civilization of Dilmun was flourishing, the cuneiform sign É was used, in Mesopotamia, to transcribe Semitic *Ḥa*, though the cuneiform sign A transcribed Semitic *aliph* and *hamza* (Krebern timer 1985). Therefore, according to third millennium writing habits, É.kar.ra may have designated the Semitic term HKR. Just as A-ga-rum renders, in second and first millennium documents, either the Semitic ḤKR or 'KR, with an Akkadian grammatical ending, so does é.kar.ra, as a reminiscence of an old and so far undocumented third millennium writing, render the

Semitic $\dot{H}KR$, with a Sumerian grammatical ending. Ancient Mesopotamian scribes, trying to express, through their own graphic system, the pronunciation of foreign words, and conforming to settled habit, ended them with indigenous grammatical terminations (cf., at Ebla, Pettinato 1981: no. 52, where all Sumerian words receive the Semitic ending *-um*).

If we accept, again, that the toponymy of Dilmun is as old as the third millennium, a distinction has to be made between Agarum- Agaš'/KR on the one hand, and Ekara/ $\dot{H}KR$ on the other hand. Dialectal variations easily explain the eventual switch from K to G.

The bilingual hymn to Nanāya, previously quoted, mentions another Ekara, $\acute{e}.kar.ra.al.gál.e.ne$ (Reiner 1974: 227.31). In this name, $al.gál.e.ne$ is a common form of the Sumerian verb "to be". According to this source, this was the Sumerian name of the $\acute{e}.babbar$ of Sippar (Reiner 1974: 227.32), the famous temple of Šamaš in that city.

The Failaka inscription (no. 46) mentioning the Ekara says, of the god who dwells in it, that he is LUGAL UD AB, possibly "king of Larsa", which means that he was the same god Šamaš.

A collection of coins from north-eastern Arabia, published by Robin (1974), shows that some kings of Hagar, MLK HGR, minted money with the name of Šamaš, the divine name being written either completely or only with the first letter of his name, Š; sometimes it is the representation of a palm-tree or of a protome of a horse which symbolizes the sun god. Robin specifies that the person who is represented on the other side of the coins may be Šamaš himself and suggests, then, that Šamaš may have been the main god of Hagar, a site to be located within the oasis of al-Hufūf or within this area (one cannot forget, in this same area, the mysterious town of Gerrha, the site of which has yet to be located).

In Sumerian literature, Dilmun was often called $ki.u_4.è$, "the place where the sun rises" (Sjöberg 1969: 89, n. 192).

Therefore it seems possible to make the following hypothesis: $\acute{E}.kar.ra$ = Hagar = al-Hufūf. It is up to the archaeologists to excavate the site on which a temple of Šamaš may have been built as early as the third millennium. The presence of a Nestorian bishop at a later period (Beaucamp and Robin 1983: 171) seems to confirm the sanctity of such a place.

An important obstacle to this hypothesis remains: according to some Arabic authors (Robin 1974: 110, n. 1), the name Hagar should have a Persian origin, being the Arabic form of the Persian Hakar. If so, any supposed link with a previous toponym disappears.

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